TIMES 1000 COMPUTER SERVICES USAGE

VOLUME I: MANAGEMENT REPORT

INPUT

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INPUT provides planning information, analysis, and recommendations to companies in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, communications, and office products and services.

The company carries out continuous and in-depth research. Working closely with clients on important issues, INPUT's staff analyze and interpret the research data, then develop recommen ients' needs. Clients receive reports, presen yses are based, and continuous consulting.

Professional staff hav the information processing industry. s in operations, marketing, or planning tical solutions to complex business prob

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INTRODUCTION

- The present study (Volume I) is based upon an analysis of 40% (611 interviews) of the total "Times 1000" population, compared with the targeted 30% response (458 out of 1522 companies) included in the study specification agreed between Honeywell and INPUT. It can thus be considered to be highly representative of the entire population, with the exception of the Irish Top 20 which are responding, but very slowly.

- The interviews were obtained by a combination of face to face meetings, telephone interviews and qualified contact mailings. Each response was scanned on reception and reviewed by telephone with the respondent where doubts were raised. The data can therefore be accorded a high degree of confidence.

- Volume II, III, IV and V arephoto-reduced copies of all actual responses as they were received. The data must be used with care, in view of the following :

  - Most companies were reluctant to disclose data on their internal expenditure patterns and applications usage.

  - While respondents, when they asked, were specifically told the data would not be kept confidential to INPUT, the indiscriminate use of contacts, expenditures and competitive data could cause alarm.

  - The report data will provide a valuable basis for HIS sales plans on an industry sector, geographic area and application usage basis ; however, it can be later used for further in-person contacts if used professionally and discreetly.

- The total response to the study was far more complete than the data used for this Volume I analysis, due to the deadline given by Honeywell for the delivery of presentation results. Total interviews completed were 703 or 46% of the total population, (target was 30%).

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• A little care can multiply the value of the data to HIS. In the same way, lack of caution can destroy its usefulness for further studies/analyses.

• While the overall target goal of 458 completed interviews was easily exceeded, there were some difficulties with specific subgroups.

• The subsidiaries of a total of 14 major company groups were addressed by "mini" mail shots after agreement had been reached with their corporate headquarters. These were :

Companies with autonomous subsidiaries	Times Classification
General Electric Co	9
Hawker Siddeley Group	29
British Electric Traction	85
Norcros	230
Laird Group	277
Morgan Crucible Co	350
Raybeck	487
Senior Engineering Group	553
Pentos	619
Adwest Group	629
Consolidated Pneumatic Tool	694
Crest Nicholson	833
Bullough	890
John James	0F-5

EXHIBIT 0-1

• In a few rare cases, questionnaires were incompletely filled in because of (a) lack of information available or (b) proprietary nature of the data. These replies have nevertheless been included since it was felt that some knowledge of a company's operations is better than none at all.

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- Data was always accepted as the respondent submitted it with no attempt to "second guess". This may appear unwarranted in instances where, for example, a terminal system is treated as a computer. This means, however, that in the eyes of the user, this is a computer. If replacement systems are offered, they must match the computer requirement that the user feels he has in order to have maximum chances of success.

- Some data was completed where mistakes were not possible, e.g. by adding "IBM" to "3740" etc, where the user has assumed this would be obvious.

- In some instances the average delay of three weeks between telephone contact and receipt of nominatively addressed questionnaires was too much for the memories of busy company EDP managers. In several cases, having agreed to complete a questionnaire, the recipient then denied all knowledge of it and refused. In others, having refused to accept one, and having received one anyway, he filled it in.

Volumes II, III, IV & V

- Originally a two volume set was planned with all of the response data grouped together in Volume II. The success of the survey far exceeded expectations in this regard with a total response rate of 46%. For a mailshot this is exceptional, even taking into account the fact that each addressee was qualified by a telephone call,

- The result has been that three extra volumes have been required, organised as follows :

- Volume II	Times Top 200	215 pages
- Volume III	Times 201-500	290 pages
- Volume IV	Times 501-1000	470 pages
- Volume V	Financial companies	440 pages

- The exact response, by company group is given in Exhibit 0-2.

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GROUP	TOTAL POSSIBLE	MINIMUM 30%	RECEIVED %	RECEIVED Number	COMMENT
Times 1000 (1-50)	50	15	84	42	
Times 1000 (51-200)	150	45	43	65	Quota
Times 1000 (201-500)	300	90	48	144	exceeded
Times 1000 (501-1000)	500	150	47	233	
Irish Top 20	20	6	40	8	Quota exceeded
Clearing Banks Finance Houses Discount Houses Building Societies	98	30	48	47	Quota exceeded
Foreign Banks British Banks Overseas	195	59	42	81	Quota exceeded
Accepting Houses Other Finance Mining Finance	40	12	38	15	Quota exceeded
Unit Trusts Property & Investment	89*	27	36	32	Quota exceeded
Insurance Companies Life & Non-life	50	15	52	26	Quota exceeded
Accountancy & Management Consultancy	30	9	33	10	Quota exceeded
TOTALS	1522	458	46	703	Minimum response of 30% exceeded

* There are only 19 managers of the 75 Trusts and Funds listed in the Times 1000 which reduces the population from 145 to 89.

EXHIBIT 0-2

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• To avoid lengthy repetition of company categories the following abbreviations are frequently used in Exhibits :

GROUP I	:	Times Top 50	
GROUP II	:	Times 51-200	
GROUP III	:	Times 201-500	
GROUP IV	:	Times 501-1000	
GROUP V	:	IRISH Top 20	
GROUP VI	:	FH =	Finance Houses
		DH =	Discount Houses
		BS =	Building Societies
		CB =	Clearing Banks
GROUP VII	:	BBO =	British Banks trading mainly Overseas
		FB =	Foreign Banks in Britain
GROUP VIII	:	AH =	Accepting Houses
		OF =	Other Finance
		MF =	Mining Finance
GROUP IX	:	UT =	Unit Trusts
		PC =	Property Companies
		IT =	Investment Trusts
GROUP X	:	IL =	Insurance (Life)
		INL =	Insurance (Non-life)
GROUP XI	:	AC/MC=	Accounting and Management Consultancy

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I MANAGEMENT SUMMARY

• This section draws the conclusions of the entire study from the standpoint of business strategy, rather than summarizing the data that forms the body of the survey (which is carried out in Section II).

• The main questions addressed are "what guidance for medium and long term Interactive Timesharing orientation can be obtained from the analysis and in what way does this conflict with present management goals ?".

LARGE ACCOUNT STRATEGY VIABLE IN THE MEDIUM TERM

• To a large extent, the large, "visible" companies have been the target of T/S vendors since the inception of Interactive services because :

(a) they were more likely to spend substantial amounts on external business services,

(b) potential business justified investment in sales and marketing efforts to capture them,

(c) they were large enough to have International dealings so that (for example) reference selling to the European division of a U.S. client was a possible strategy for market entry,

(d) their peak needs for EDP processing could easily outstrip their in-house computers, if they had one, so that in-house processing was not a hindrance etc..

• Are these facets of the market still true ? Is a "large account" strategy still viable ? Quite simply, yes. To begin with, despite the healthy size to which the U.K. Interactive Timesharing market has grown, in the words of one Timesharing Executive : "there are still a lot of elephants in the park." This is amply supported by a factual analysis of each of the company groups examined by the survey = non-users are the majority, even among the very large companies.

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• More surprising, perhaps, is that non-users of EDP equipment can still be found in substantial numbers at the highest level of company size. The market for hardware is also far from being saturated.

• Market expansion, (and market share expansion) can still take place on the basis of a "large account" strategy that actively seeks new clients. (This is because the total Interactive Services market growth is expanding faster than the existing users plan to expand their usage).

IN THE LONG TERM THE MULTIPLIER IS APPLICATIONS

• Given that the market can happily grow at near 30% per annum for the next 4 or 5 years through the expansion of existing services, where and when will the limit be reached ? Are present product/service strategies adequate ?

• The answer lies in the market today; while the battle for market share and rivalries for the leader position can be a useful management tool to motivate staff, there is little evidence in the marketplace today of this competition. T/S vendors, even the largest, rarely clash. They simply offer different services.

• This trend away from competition and towards a specialisation of the markets served by each vendor is already apparent and will continue to develop. The market size will go with it.

• Tomorrow's T/S market is more likely to be served by a longer list of vendors than by a shorter one. Most prominently poised for entry, thanks to their "end user base" are the PTTs and the Banks.

NEW COMPETITION ALREADY IN PLACE, NOT OPERATIVE

• The number of British Banks offering simple payroll services is quite considerable, but few have entered the Remote Computing market (if we except the subsidiaries like Nat West's Centrefile).

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The advent of Electronic Funds Transfer will provide an excellent opportunity for banks to step in with added value services that complement the basic transaction service of money movement, by summary lists (ledgers), cash flow planning and the like.

- The PTTs have already adopted a proprietary attitude to the networks and their usage and at least one (French) has announced its intention of providing network-based services.

- The networks (whether PSN or leased line) belong to the PTTs. The T/S business know-how belongs to the T/S vendors, however, and the likelihood of state-owned PTTs providing sophisticated services is remote. Vendors must be prepared to relinquish the "time-hire" business, however.

REMOTE BATCH CLOSER TO INTERACTIVE THAN BATCH

- The RB user base is today composed of users in essentially the same company stratum as that served by the Interactive Timesharing vendors. By integrating hardware sales into the services offered at present, this RB market can be addressed with relatively little change in Marketing/Sales structure, but with substantial rewards from the higher value per contract.

- The ability of the many small Batch vendors to fund from their own ressources the development of RB services is doubtful. RB services rely on large centralized processing systems which these vendors do not possess and cannot afford.

- The RB market, small today in the U.K. but growing very rapidly, presents an interesting growth market for the T/S vendor if he can adequately package a network concept with modular network nodes (terminal, terminal system, minicomputer/small system) to profit from the current wave of interest in Distributed Data Processing.

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• The latter (DDP) is far from developing in European markets yet, but to recognise and anticipate its possibilities as a vehicule for Remote Computing Services development will provide long term benefits to those who are prepared when the upswing arrives.

HONEYWELL AS A TOTAL SOLUTION VENDOR

• There are a few vendors (in practice only two - HIS and IBM) that can demonstrate knowledge of, and capability in, all of the departments of EDP processing that make up the users total EDP requirement. CDC is a theoretical third, but falls down on one practical selection test - market presence.

• IBM is still constrained by legal considerations (SBC settlement) and practical considerations (IBMs service strength is still Batch) from becoming, overnight, a total solution vendor. This is unlikely to continue far into the future : there will be less and less reason to separate a hardware vendor from a services vendor in the coming years and absolutely no justification for separating minicomputers from small or medium sized mainframes, since they will be using identical technology and architecture.

• The separation between vendors will become more and more connected with the applications that his "systems" can process. In the same way that an NCR can prosper in the cut-throat hardware systems world through its applicational strength in Distribution and Banking markets, each vendor will be called upon to demonstrate its capabilities in applicational terms.

• From a hardware and "systems" component (network expertise, Timesharing environment knowledge, terminal, minicomputer, small business processor mainframe, peripheral, basic software, database capabilities), Honeywell has an opportunity to "put it all together".

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• This entails viewing each section of Honeywell's present business as part of a whole service, not as a separate environments to be pursued individually. The conversion to a "total solution" vendor approach can be undertaken step by step, beginning with the integration of terminals and minicomputer hardware into Remote Computing Service offerings.

• Having achieved this simple product/service merger, the next step, - full integration of service sales and support functions with those of the mainstream hardware products, à la IBM (see section III) would require a total re-think of the present organisation structure. The advantages of such a move are great :

- the client's particular combination of harware/service needs can be fully met, and he deals with a single Honeywell company interface,
- the overheads for selling and supporting services and products can be shared.

• There are no obvious pressures to make this move in the near future. T/S operations and minicomputer sales are both highly profitable in their own right. But the creation of an integrated product/service offering entails the re-organisation and re-education of the present human ressources. This, like other integrations, (e.g. Text processing with data processing) are not easily achieved and are best begun <u>before</u> the need is apparent.

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II UNITED KINGDOM MARKET TRENDS

SUMMARY

- All computer services categories in the United Kingdom market show a clear growth trend, although the rate of growth varies substantially from one category to the next. Non-users remain the majority of the total population of 1522 companies interviewed during the research program (58% in all), a finding that lends credence to the"large company-only"strategy adopted by many computer services vendors.

- These non-users are spread fairly evenly throughout the entire sample, with, as would be expected, a bias of more users in the Times Top 50 gradually diminishing as the company size decreases. Only the Times Top 50 group, Insurance companies and Accounting/ Management Consultancies show more than 50% of companies using Computer Services.

- Substantial business growth can therefore be sustained by accurately targeting this large-company group.

TRENDS IN COMPUTER SERVICES

- Each service category shows a significant number of users that anticipate a decline in their present usage as well as a larger percentage of users anticipating growth. Except in the smallest market category (Remote Batch), this proportion of declines is relatively high. The conclusion from this must be that new users are the best market target of all since they represent 100% net growth.

- This is further confirmed by examining the relative proportion of "growth" clients over "declines" in each of the expenditure ranges (less than £1000 per annum, between £1000 and £5000 etc).

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TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

TOTAL SAMPLE: 611 (40%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K < 5K	≥ 5K < 12K	≥ 12K < 25K	> 25K	TOTAL
BATCH	Growth	2	5	5	5	15	32
	Decline	1	3	3	2	5	14
REMOTE BATCH	Growth	1	2	4	2	15	24
	Decline		1		1	3	5
INTER-ACTIVE	Growth	2	5	8	6	15	36
	Decline		1	3	1	6	11

Note : percentages shown are applied only to the users (283) of computer services within the 611 response sample.

ACTIVITY: ALL

Exhibit II-1 shows that the"declines" are in a 3 to 1 ratio in the largest spenders for Batch and 2.5 to 1 for the same group in Timesharing. In Timesharing the proportion of declines increases as the expenditure increases.

- This first chart can be misleading if interpreted too strictly, however, since the size of each "growth" vote is not uniform but varies considerably (from 5% to 100%). By service category the average ranges of the entire sample were :

  Batch Services : 10% to 15% growth
  Remote Batch : 20% to 25% growth
  Interactive Timesharing : 25% to 30% growth

- As would be expected, the largest market (Batch Services) showed the smallest growth trend, while the smallest market (Remote Batch) showed an almost 5 to 1 trend in favour of growth.

COMPUTER SERVICES CATEGORIES ANALYSIS

Batch Services

- Batch Services continue to be a popular service in the Industrial group of companies examined (Times Top 1000). This is not true of the Financial companies included in the survey.

- The stability of the user base is questionnable in some key sectors of the market (British Banks Overseas, Foreign Banks, Insurance companies, Clearing Banks, Building Societies, Finance Houses, Discount Houses) but also in the lower half of the Times Top 1000 (see Exhibit II-2). In this last category the percentage expecting a decline in expenditure is high (14%).

- This a key sector for the Batch companies since the larger companies will increasingly dispose of their own computer or be the target of competitive services/products. Growth in this area cannot come from the non-users,either,for much the same reason, plus the added competition of minicomputers and small business systems.

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BATCH SERVICES EXPENDITURES TREND (% OF EACH GROUP SAMPLE)

GROUP	NON USERS	USERS			
		NUMBER	STABLE (%)	GROWTH (%)	DECLINE (%)
TIMES TOP 50	10	15	45	41	14
51-200	29	29	47	37	16
201-500	64	77	47	38	15
501-1000	143	90	62	24	14
IRISH 20	5	1	83	17	-
CB/BS/FH/DH	27	19	84	16	-
BBO/FB	51	15	79	14	7
AH/OF/MF	8	6	67	33	-
UT/IT/PC	22	10	70	30	-
IL/INL	11	13	54	31	15
AC/MC	-	8	11	63	26
TOTALS (WEIGHTED %)	370	283	(54)	(32)	(14)

Note : percentages in this chart refer only to the computer services user population in each group.

Exhibit II-2

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BATCH SERVICES USED BY

SUPPLIER AND RESPONSES

TOTAL SAMPLE 611 (40%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% <10%	≥10 <25%	≥25 <50%	≥ 50%
B O C	5	1		2	1	5
BARIC	5	3	8	4	4	5
CDC	3	1		2		
CMG	4				2	2
ADP – MD	3	2		2	1	1
GEEST	1		2		1	
COMPUTEL	2	1	1	3	2	
COMPOWER	1		3	3		2
IBM	2		2	1	4	3
OTHER	40	2	10	12	15	34
CENTREFILE	6	2	4	1	2	4

Note : numbers in this chart are the responses received for each vendor

ACTIVITY: ALL

GROUP: ALL

EXHIBIT II-3

- The Batch Services market is growing by 8-10%, but no single Batch Services vendor emerges as a strong leader of the market. Baric is, relatively speaking, the most frequently found vendor followed by BOC. However, in the Building Societies group, Centrefile absorbs 90% of the business. The second tier suppliers are COMPOWER, COMPUTEL, CMG and ADP(MD). See Exhibit II-3.

- The Batch Services market is gradually losing its clients to in-house computers (frequently turn-key minicomputers) but has not lost a great deal to Remote Batch Services as yest.

- The clearest indicator to the nature of the Batch Services market lies in the "other" column of Exhibit II-2. A total of 113 responses out of 611 concern Batch Vendors who are not part of the 10 major vendors listed. The Batch Services market is fragmented into many small territories (vendor combinations of type of service offered and geographic coverage of their companies). Without an external source of investment these vendors cannot grow substantially. Their territories are limited, as are their abilities to fund new product development and marketing force expansion.

Remote Batch Services

- In the markets examined by the survey, the penetration of Remote Batch Services was small indeed. This is amply demonstrated by Exhibit II-4 which gives the actual responses received from users of the various vendors listed. Only 86 single-and multiple-source users were found.

- The massive support of Centrefile by Building Society group distorts the picture from a vendor market share standpoint, and it would be erroneous to extrapolate this data to other, wider markets.

- Users of Remote Batch Services have less of a tendency towards a decline of usage than Timesharing and Batch users and a higher percentage of stable users. There is less evidence among users towards growth, however.

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REMOTE BATCH SERVICES USAGE

BY SUPPLIER AND RESPONSES

TOTAL SAMPLE 611 (40%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5%<10%	≥10%<25%	≥25 <50%	≥ 50%
CENTREFILE	16	1		2	1	2
UCC	2			1		1
SIA			1	2		
UCSL					1	1
IBM	2	1		3	1	1
COMPOWER			1	1	1	1
COMPUTEL	1	1	1	2		
SCICON		1		1		1
CDC		1		1	1	1
LOWNDES-AJAX	2	1			1	2
OTHER	3	2		5	3	10
HIS	1					1

Note : values shown are the number of responses given to each vendor

ACTIVITY: ALL

GROUP: ALL

EXHIBIT II-4

REMOTE BATCH EXPENDITURE TREND (% EACH GROUP SAMPLE)

GROUP	NON USERS	USERS			
		NUMBER	STABLE (%)	GROWTH (%)	DECLINE (%)
TIMES TOP 50	10	15	53	47	-
51-200	29	29	64	33	3
201-500	64	77	63	30	7
501-1000	143	90	87	12	1
IRISH TOP 20	5	1	100	-	-
CB/BS/FH/DH	27	19	48	47	5
BBO/FB	51	15	66	27	7
AH/OF/MF	8	6	83	-	17
UT/IT/PC	22	10	90	10	-
IL/NL	11	13	54	23	23
AC/MC	-	8	74	26	-
TOTALS (WEIGHTED %)	370	283	(71)	(24)	(5)

Note : percentages in this chart refer only to the Computer Services users in each group.

EXHIBIT II-5

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• In Exhibit II-5, the eleven company groups' individual expenditure trends show a remarkably heterogeneous picture :

- the Accepting Houses/Mining and other Finance group evidences a lack of interest in Remote Batch services.
- similarly, the Insurance sector is an RB market in a state of flux with an equal number of users with a tendency towards growth as there is with a tendency towards a decline in usage.
- all other sectors are growth markets, the largest of which is the Times Top 50. The Times 51-200 is also a good growth market.

• The significance of the last point lies in the fact that the Remote Batch services growth sectors are, (with the exception of the Clearing Bank/Building Society/Finance and Discount Houses - very much the province of Centrefile at present), located in those markets where Timesharing services are strong and Batch Services vendors are weak.

• Thus, it is more likely that the Remote Batch market will be serviced by Timesharing vendors than by Batch vendors extending their coverage to a larger client base than at present.

• None of the major services vendors (IBM, UCC, HIS, COMSHARE) have established themselves strongly in the company groups examined. The market is therefore very much open to a determined thrust by vendors convinced of the inevitability of distributed processing and who can successfully package local hardware with remote processing applications know-how provided through a network.

Interactive Timesharing Services

• The contrast in usage of T/S services with usage of Batch and RB services is striking ; it is the most heavily used external service. The distribution of the expenditure is also clearly established between the major vendors, (see Exhibit II-6).

• IBM is the most often cited single source supplier (i.e. the

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INTERACTIVE SERVICES USAGE

BY SUPPLIER AND RESPONSES

TOTAL SAMPLE 611 (40%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		<5%	≥5% <10%	≥10 <25%	≥25 <50%	≥ 50%
HIS	11	9	1	8	10	5
COMSHARE	8	2	3	9	9	6
ADP–NIS	3	2	2	5	3	3
IBM	15	3	3	3	2	7
CRC			2	1	1	
ATKINS ON-LINE			2	8	2	3
CDC	1	2		3	2	2
I.P.SHARP					1	
TYMSHARE			1		1	
OTHER	9	4	2	7	7	11

Note : the numbers in this chart are the responses received for each vendor

ACTIVITY: ALL

GROUP: ALL

EXHIBIT II-6

INPU

only vendor with whom the user deals) and when sharing the user's T/S expenditure, tends to have a dominant (greater than 50%) share. IBM is only the third largest T/S vendor in the UK, however.

- Honeywell, while present at far more sample sites than any other vendor (44), tends to participate at multiple source sites with less than half the share of the user's T/S expenditure. On the strength of this survey, HIS is the UK T/S market leader.

- COMSHARE is present in the company groups examined more frequently than IBM and often shares its T/S clients with other vendors. The share is usually a large one. COMSHARE is the second largest T/S vendor in the U.K.

- ADP-NIS has a far smaller market share than the previous three vendors and usually has to share its clients T/S expenditure with other vendors.

- Atkins On-line, CRC and CDC have far smaller shares than ADP and are not in contention for market dominance. The "other" group includes SCICON, BOC, SIA, SYSTEMSHARE, RAPIDATA and BARIC, none of whom have a major bearing on the market.

- The market for Interactive Timesharing services in the company groups examined shows strong growth in the Times Top 500. Growth is also good in the Times 501-1000, British Banks Overseas and Foreign Banks. In all markets, with the exception of the Times Top 500, the user base is in a state of flux with a substantial proportion planning to decrease their usage of T/S.

- This "de-emphasis" of T/S is most apparent in the Insurance and Accounting/Management Consultancy sectors where planned declines reached 31% and 38% respectively.

- The T/S market growth in the U.K. has reached 29% per annum, which cannot be sustained by the increased usage of T/S by current users, (who alone account for nearly half of this growth). Thus, new users must be sought by the major vendors to keep pace with (or exceed) the rate of market growth so as to sustain or increase current market shares.

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INTERACTIVE TIMESHARING SERVICES EXPENDITURE TREND (% EACH GROUP SAMPLE)

GROUP	NON USERS	USERS			
		NUMBER	STABLE (%)	GROWTH (%)	DECLINE (%)
TIMES TOP 50	10	15	33	60	7
51-200	29	29	31	55	14
201-500	64	77	46	42	12
501-1000	143	90	67	29	4
IRISH TOP 20	5	1	100	-	-
CB/BS/FH/DH	27	19	85	10	5
BBO/FB	51	15	26	47	27
AH/OF/MF	8	6	83	17	-
UT/IT/PC	22	10	70	20	10
IL/INL	11	13	38	31	31
AC/MC	-	8	10	52	38
TOTALS (WEIGHTED %)	370	283	(53)	(36)	(11)

Note : percentages in this chart refer only to the Computer Services Users in each group.

EXHIBIT II-7

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APPLICATION USAGE

- The two broad groups of industrial companies (Times Top 1000 plus Irish Top 20) and Financial Companies (all other) were examined for their present use and intended use of applications in the main areas of their commercial and administration activities. These are summarized in Exhibits II-8 and II-9.

- In each chart the percentages shown are based on responses divided by the entire sample in each group which approximated to 41% and 39% respectively of the Industrial and Financial company populations.

- In the Industrial group there is a heavy but stagnating market for general accounting and payroll services, with only two thirds of the present users planning to make greater use of applications in this area.

- Users of Marketing/Sales Analysis and Production/Inventory show sustained interest in expanding their usage, but only two thirds of the population use them at present.

- Personnel Management and Financial Analysis/Planning applications are (a) used by around half of the population and (b) expected to be used more widely in the future.

- Engineering and Scientific applications have the smallest user base of all whose planned usage is expected to grow. This area of the market has yet to be fully exploited.

- In the Financial company group there was a lack of identification with the applications proposed, with most respondents using specialized applications. The applications demand was weak in all areas, as was the planned future usage of these same areas. The chart is self explanatory.

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APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 421 (41%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	25		24
B	62		64
C	65		56
D	38		46
E	87		57
F	53		68
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

LEGEND

A= Engineering/Scientific
B= Production/Inventory
C= Marketing/Sales
D= Personnel
E= General Acctg/Payroll
F= Financial Analysis/ Planning
G= N/A
H= N/A
J= N/A

ACTIVITY: INDUSTRIAL

GROUP: ALL

EXHIBIT II-8

APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 182 (39%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	20		13
B	14		14
C	9		8
D	7		6
E	N/A	N/A	N/A
F	N/A	N/A	N/A
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

LEGEND

A=General Acctg/Payroll
B=Financial Analysis/Plg
C=Portfolio Management
D=International Financial Dealing
E= N/A
F= N/A
G= N/A
H= N/A
J= N/A

ACTIVITY: FINANCIAL

GROUP: ALL

EXHIBIT II-9

- A side benefit of the Computer Services usage analysis was the detailed information obtained from respondents on their in-house hardware usage. This was detailed enough to provide :
  - market shares by company group (see Exhibit II-10)
  - distribution of each vendor's hardware by site size
  - distribution of vendor hardware by terminal cluster size
  - distribution of third party terminals across system suppliers
  - an analysis of each of these aspects within each company group (excepting those that have a small sample : IRISH TOP 20, A/MC).

- The resulting analysis is an eye-opener in many respects. The main points are :
  - IBM has a clear overall market lead and in all company groups except three (two of which are tied market shares with ICL).
  - ICL's market coverage is patchy in some areas (Unit Trusts/ Property Companies/Investment Trusts, Bristish Banks Overseas/Foreign Banks, Accounting/Management Consultants).
  - HIS has the third largest market share by number of machines, with an irregular penetration of some key markets (Times Top 500 etc, see Exhibit II-10).
  - DEC, in the space of four years has become a significant supplier of commercial systems and manages to lead the market in the Accepting Houses/Mining and other Finance group, and Accounting/Management Consultants.
  - Burroughs is close to challenging HIS (in system numbers though not in value) as is NCR.
  - UNIVAC, whose small number of large systems are not easily found, is not in contention for market share on the basis of number of systems.

- Exhibit II-11 provides a detailed analysis of how the site size varies (single, dual, multiple processors) with terminal clustering (5, 10 etc) by make, at which vendor's site. This analysis is repeated by company group in section IV.

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IN-HOUSE HARDWARE USAGE
BY MANUFACTURER (SAMPLE ANALYSIS)

MARKET SHARE BY NUMBER

GROUP	IBM	ICL	HIS	DEC	BURROUGHS	NCR
Times Top 50	28	25	8	-	6	6
Times 51-200	26	31	5	7	8	-
Times 201-500	32	26	5	7	5	5
Times 501-1000	26	24	10	7	7	7
CB/FH/DH/BS	25	25	9	6	*	16
BBO/FB	45	5	8	3	13	15
AH/OF/MF	13	13	13	25	13	14
UT/PC/IT	29	-	14	14	-	-
INSURANCE	34	24	14	*	3	4
AC/MC	33	-	-	66	-	-

EXHIBIT II-10

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INPUT

IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER (PRINCIPAL)

TOTAL SAMPLE: 611 (100%)

TERMINALS		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	BURROUGHS	NCR	DEC	OTHER
QUANTITY	NONE	27	24	7	6	12	3	1	4	4	2	8
	≤5	*	9	4	1	5	2	*	*	1	1	3
	>5 ≤10		2	2	1	2	*		1	*	1	1
	>10 ≤20		2	2	2	3	*	*	1	*	1	1
	>20		3	3	5	5	2	1	1	*	2	3
SUPPLIER	IBM		6	3	2	11						
	HIS		1	1	*		3					
	UNIVAC		*	*	*			1				*
	BURROUGHS		*	1	1				2			
	ICL		4	3	3	*						*
	OLIVETTI		*	*	1	*						
	ITT		1	*	1	1	*					
	DATA 100	*	*		*	*						
	HARRIS			*	*	1						*
	INCOTERM		*		*		*		*			
	DATAPOINT		*	1	*	*	*	*				*
	OTHER		5	4	6	3	1	*	1	1	3	5

Note : * denotes percentage smaller than 1%.

ACTIVITY: ALL

GROUP: ALL

EXHIBIT II-11

III HONEYWELL'S MAIN NIS COMPETITORS: COMSHARE, IBM

DETAILED COMPANY PROFILE

COMSHARE LIMITED
32-34 Great Peter Street
LONDON SW1
(01) 222-56-65

Ian Mc Naught-Davis
Managing Director
Owned by COMSHARE INT'L B.V.
Total employees : 215 (UK)

Total Computer Services Sales

Fiscal year end 1976 : £ 3,641,000
Fiscal year end 1977 : £ 5,550,000

COMSHARE LTD OVERVIEW

- In Western Europe COMSHARE LTD has grown dramatically since its inception in 1971, initially through competitively priced interactive services, then through the 3rd party lease from EPS Consultants of the financial modelling system FCS (which is now used in the U.S. also), then by the gradual addition of database management services such as COMPOSIT 77, QUESTOR and TACTICS and the provision of information databases (e.g. the PTT tariff database, the crown copyright census data "-Site-" and the Extel UK company data).

- The status of COMSHARE LTD is now that of the prime supplier (though not the largest) of on-line services in the UK, having largely superceded the stage of simple provision of time-sharing. As a result, competition is becoming more and more remote as the services provided become more and more unique. An increasing proportion of business is gained through the integration of industry specailists into the front-end sales effort in the corresponding sector, creating a very respectable image for the company.

- A huge effort has been expended in "Hand-holding" and initial systems training of clients who are taught COMSHARE services, and systems, not timesharing techniques. This is beginning to pay dividends now.

- Revenue is mainly produced by encouraging heavy usage of the systems available and not by charging heavily for storage. This is almost the complete reverse of ADP-Network Information Services.

• COMSHARE is making an effort to focus its ressources on specialized markets and applications, maximizing the value-added of each service provided. They take a high profile on things they are good at, actively discouraging those services that they feel are not worthwhile in the long term, (e.g. non-specific time sharing).

• The company is highly people-oriented, and attracts many spontaneous job applicants due to its increasingly good image. They do not hire from the services industry, in general, preferring to increase their industry specialist staff who are then trained intensively (3 months).

• This increasing specialisation, to a certain degree, insulates the company from the competition.

COMSHARE Ltd (UK) ORGANISATION

• This is structured around, and in support of, a highly specialized marketing and sales structure, emphasizing the growing dedication of COMSHARE Ltd to industry-specific services and products.

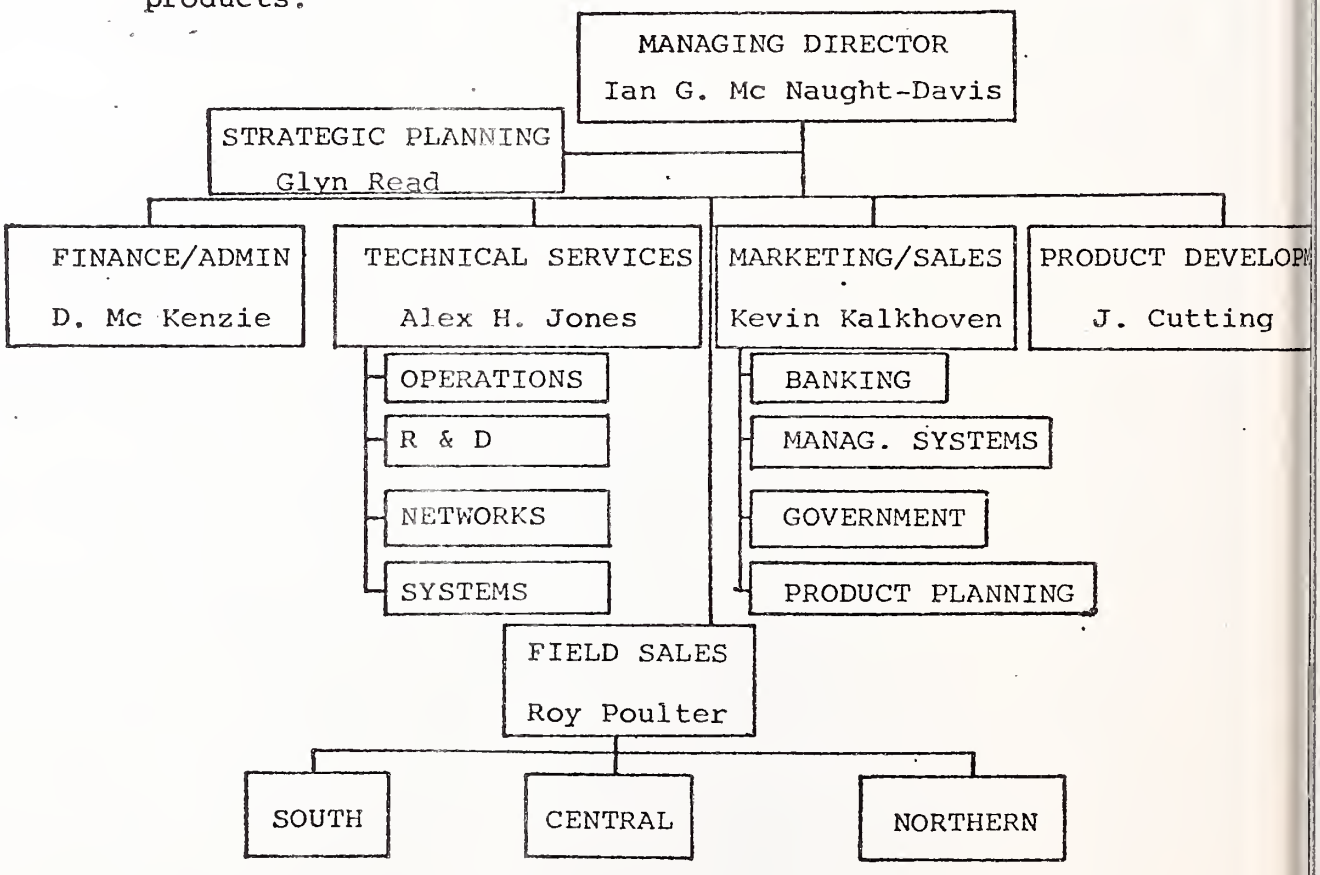


EXHIBIT III-1

U.K.STAFF AND GROWTH

- The U.K. headcount has risen dramatically :

  1975 : 139
  1976 : 170
  1977 : 215

- Revenue has kept pace with this :

  1975 : £ 2,468 M
  1976 : £ 3,641 M
  1977 : £ 5,550 M

KEY PRODUCTS AND SERVICES

- COMMANDER I, COMSHARE's initial Timesharing technology went live in 1967. (It was sold to Télésystèmes in France, who also holds the COMMANDER II license in France). It is supported by 10 Xerox 940s. COMSHARE Inc. has a 360/50 in Philadelphia.

- COMSHARE Ltd (UK) has been committed for some time to being number one in the Financial Planning services market, but is now broadening its horizons to choose other markets and become the best in those markets. COMSHARE Ltd currently has 5 Xerox Sigma 9s which will be expanded to 6 by the end of 1978.

- COMMANDER II is now the only technology offered in Europe, with large C-II systems based on Xerox 9s in Ann Arbor, Michigan (USA), Toronto, Ontario (Canada), and London (UK). The Tokyo (Japan) centre is not connected to the network. Each centre supplies power to the national market and is linked to the other centres through the AMBASSADOR service. Large engineering "number-crunching" applications are run on a CDC 6600 in US Steel that ties into the network.

- The network (TELEGRID) is minicomputer based, (78 Interdata of which 25 in the UK)

COMSHARE WORLDWIDE

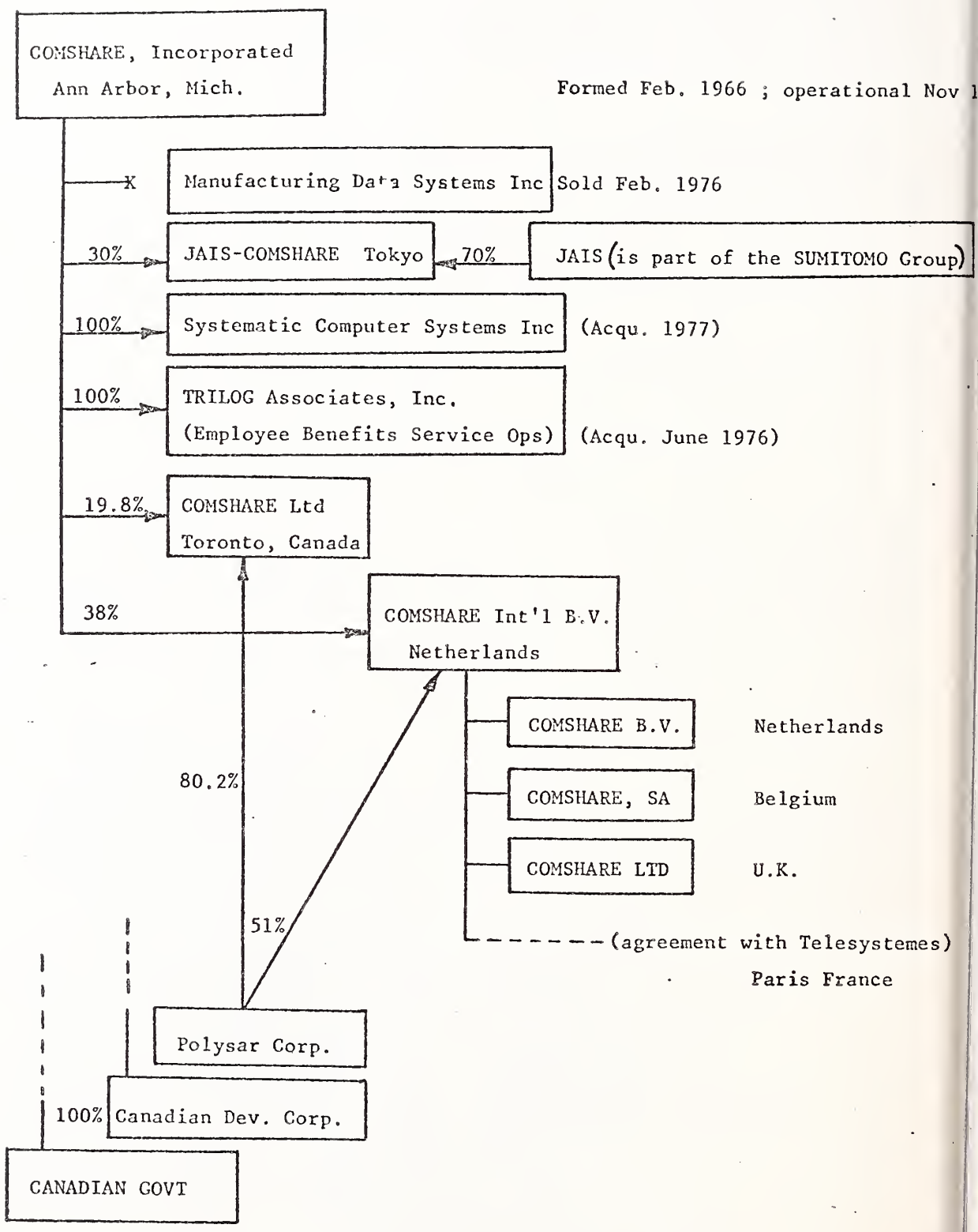


EXHIBIT III-2

• COMSHARE key product areas are :

- Financial Planning (DATAFORM, FCS, PLANMASTER)
- Data Management Systems (COMPOSIT 77, TACTICS, DATAFORM)
- Materials Management (BOSS)
- Engineering Design/Scientific (SDRC, IMSL)
- Personnel Reporting and Analysis (QUESTOR)
- Proprietary databases (SITE, TARIFFICA)
- Foreign Exchange (FEAMIS)

COMSHARE Inc., USA

• The COMSHARE Inc. parent company, situated at 3001, South State Street in Ann Arbor, Michigan, is a public corporation traded over the counter, employing 450 employees in the U.S. Primary a remote computing services vendor, COMSHARE Inc. had the following growth and U.S. sales over the last three years :

YEAR	U.S. Sales	Growth (%)	After tax earnings (before extraordinary credit
1975	$ 12.3 M	-	$ 0.76 M
1976	$ 13.8 M	11.4	$ 0.72 M
1977	$ 18.2 M	32.9	$ 1.475 M

Earnings per share on income before extraordinary credit rose 83% in 1977 from 52 ¢ to 95 ¢ per share with average outstanding shares at 1,548,000.

• Unconsolidated 1977 overseas revenue from affiliated companies brought total revenues to $ 30.7 M. Equity in earnings of affiliated companies was $ 66,000 in 1977 compared with the 1976 loss of $ 129,000.

• Eleven percent ($ 2.0 M) of the 1977 revenue increase came from acquisitions :

- Trilog, specialized in Computer based employee benefit administration and reporting services.

CONFIDENTIAL

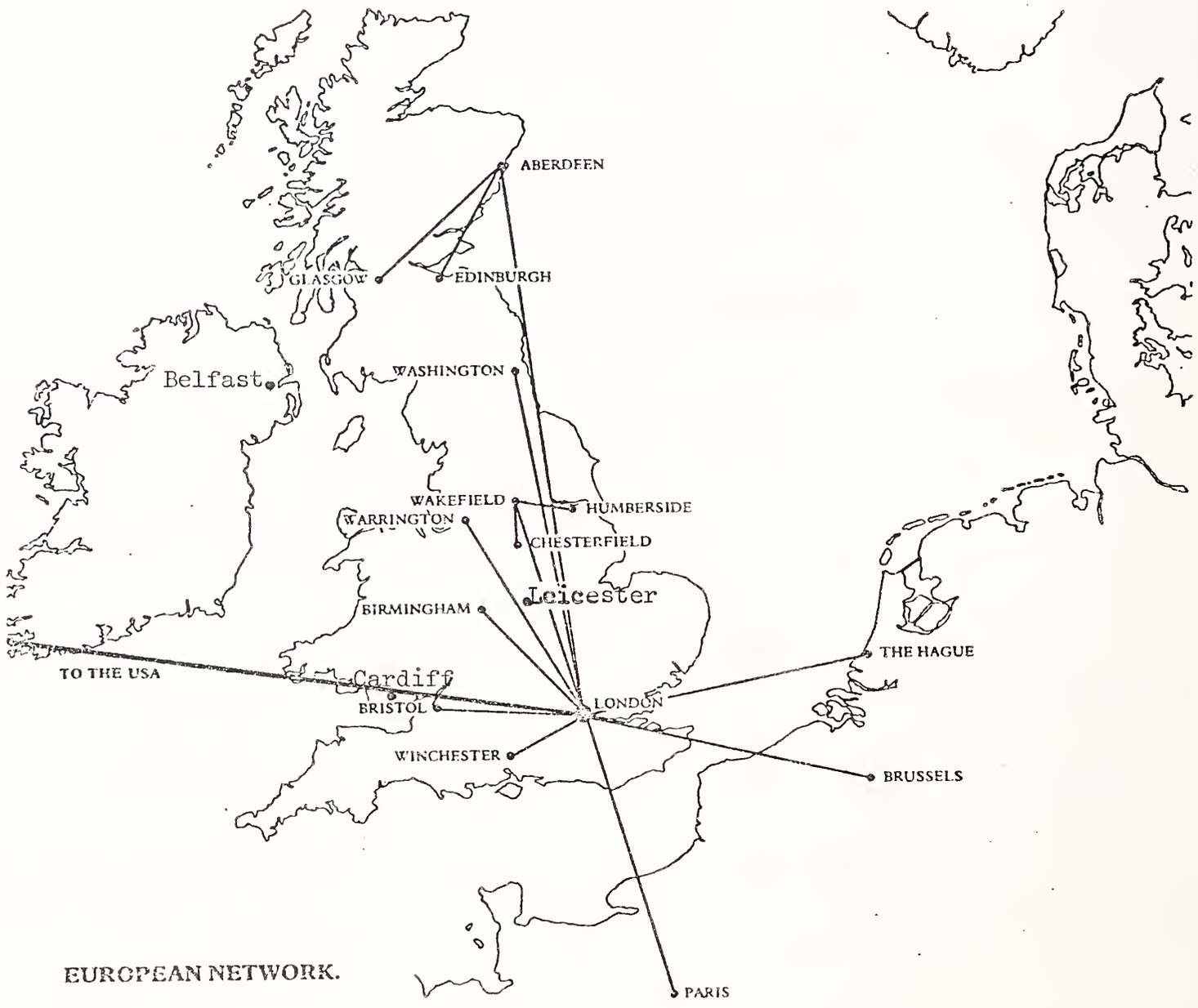


EXHIBIT III-3

- Systematic Computer Systems Inc., specializing in tax return processing.

- COMSHARE Inc., leases its office and computer facilities.

- The company has funded joint development of a Replacement Cost Accounting system with Valuation Systems Corp.

- In 1975, after Xerox's demise from the computer business, the range of depreciation lives of the computers and communications equipment was extended from 3-10 years to 3-12 years, but the salvage value was cut from 20% to 5%. Software and systems development costs are charged against earnings in the year incurred.

US KEY PRODUCTS AND SERVICES

- COMSHARE Inc., specialty products include :

  - COMPASS, generating $ 2.7 million in revenues. It provides professional accounting services to accounting firms. It is used by over 1600 accounting firms, including 28 of the 30 largest CPA firms in the country. COMSHARE Inc. has been selected by the American Institute of CPA's as the source of professional national program library services. Functions performed include general ledger, project accounting, internal time and billing, staff scheduling, auditing, and tax processing.

  - 4.1.1. Systems, for Telephone Equipment Inventory and Number Assignment, generating $ 2.2 million. Designed for telephone companies, it balances central switching office traffic and manages, assigns, and forecasts central office equipment. It is used by six of the 19 Bell Telephone operating companies and by two of the 10 major independent telephone companies.

- Human Resource Management software, PRO/FILES and EBS, generating $ 2.3 million revenues. PRO/FILES is a human resource management system designed for personnel managers to create inventories of employee skills, perform statistical analysis, forecast manpower requirements, and prepare reporting information required by the EEO and Affirmative Action. EBS is a product for employee benefit record keeping and administration and is sold primarily to corporate clients and banking institutions.

- COMSHARE's financial products and services, including its replacement cost accounting software, VSCOM-190, generate $ 1.6 million in revenues.

U.S. APPLICATIONS REVENUE

• Specialty applications are COMSHARE's primary source of domestic revenues in 1977, as shown below :

	1977 $ U.S.	% Total U.S. $
Specialty	$ 8.8 M	48%
Database Management	5.8 M	32%
Utility	3.6 M	20%
	$18.2 M	100%

• COMSHARE markets to a wide variety of industries. Its industry-specific accounting and telephone company product lines, along with two industry-independent personnel and financial product lines, generated approximately 50% of 1977 revenues. Remaining revenues are derived from generalized and data management services.

COMSHARE Ltd (UK) STRATEGIES

- It has been expected for some time that Comshare must replace its ageing Xerox hardware with one of the major mainframe manufacturers. Initially IBM 370 hardware was examined, followed more recently by future series.

- COMSHARE's decision to go with Univac comes therefore as a surprise, and follows unsatisfactory negotiations with IBM UK Ltd. The model to be standardized on will be either the 1108 or the 1100 series, according to the company, who will be placing its first order in the next two months.

- This would give COMSHARE a useful compatibility of hardware with U.C.C. should an acquisition possibility occur but little else in the immediate future. It would also suggest that COMSHARE Inc. has made the same decision in principle.

- COMSHARE Ltd (UK) has also decided that the main revenue growth must come from applications, not from increased volume of processing time sold. The result will be a drive towards specialisation of applications offered to specific branches of industry where they feel that they have in-house competence in the form of consultants with long experience in that field (and not necessarily technical competence in T/S).

- Pricing strategy is therefore to offer value-priced services, not cost-priced services. In 1978 prices will not change.

- Marketing/Salesmen staff turnover is small - 3%.

- 1978 growth is targetted at 47% over 1977, twice revised upwards from earlier estimates of 38%.

- COMSHARE's 1200 band service is not vulnerable (the delay in Post Office availability of full duplex 1200 baud, competitive offerings etc) since (a) most of the users are on leased lines and (b) they are committed to COMSHARE.

COMSHARE LTD UK

FINANCIAL ANALYSIS

£ 000

	1975	1976	1977
• TOTAL REVENUE	2468	3641	5550
- Overnight Batch		128	400
- Interactive Services		2900	4250
- Remote Batch		200	250
- Belgium		128	200
- Holland		285	450
• Pretax Profits	102	367	1151
• Current Assets	745	1248	1310
• Current Liabilities	734	859	1509
• Current Assets/Liabilities	1.01	1.45	0.87
• Employees	139	170	215
• Revenue/head	17.76	21.42	25.81

EXHIBIT III-4

Corporate Directory

COMSHARE Corporate Headquarters:

3001 South State Street
Ann Arbor, Michigan 48106
Telephone: (313) 994-4800

Worldwide Offices

United States
Atlanta
Boston
Chicago
Cincinnati
Cleveland
Detroit
Houston
Los Angeles
Minneapolis
New York
Philadelphia
Pittsburgh
San Francisco
St. Louis
Washington, D.C.

Canada
Hamilton
London
Montreal
Ottawa
Toronto
Vancouver

United Kingdom
Aberdeen
Birmingham
Bristol
Glasgow
London
Wakefield
Warrington
Washington
Winchester

Belgium
Brussels

The Netherlands
The Hague

Japan
Tokyo
Osaka

COMSHARE, Incorporated

Directors

Richard L. Crandall
President and Chief Executive Officer, COMSHARE, Inc.
President, Managing Director, COMSHARE International, BV

Stanley R. Day
Capital Investments Consultant. Director for Rock Island Corp., Champion Home Builders, Dietzgen Corp.

W. John Driscoll
President, Rock Island Corporation, a private investment company

Glenn V. Edmonson
Director, Bio-Engineering, The University of Michigan

Richard P. Eidswick
Senior Vice President, COMSHARE, Inc.

Brian Sullivan
Partner in Dykema, Gossett, Spencer, Goodnow & Trigg, Attorneys-at-Law

Officers

Richard L. Crandall
President and Chief Executive Officer

Robert G. Boylan
Vice President, Marketing

Richard P. Eidswick
Senior Vice President

T. Wallace Wrathall
Vice President, Finance & Administration
Secretary, Treasurer

Stanford R. Amstutz
Vice President, Product Development

Paul E. Atkinson
Vice President, Research & Development

H. Thomas Brooks
Controller

Jerome A. Chessler
Vice President, Corporate Development

Donald J. Devine
President, Trilog Division

Ronald E. Jeffries
Vice President, Language Development

General Legal Counsel
Dykema, Gossett, Spencer, Goodnow & Trigg
Detroit, Michigan

International Legal Counsel
Baker & McKenzie
Chicago, Illinois

Auditors
Arthur Andersen & Co.
Detroit, Michigan

Transfer Agent & Registrar
National Bank of Detroit
Detroit, Michigan

Associate COMSHARE Operating Companies

COMSHARE Ltd.
Toronto, Canada
Derek G. Price
President
H. Roger Kirby
Vice President, Marketing
Karl K. Rose
Vice President, Technical

COMSHARE Ltd.
London, England
Ian G. McNaught-Davis
Managing Director
Alex H. Jones
Technical Director
Kevin Kalkhoven
Director
Roy Poulter
Director

COMSHARE SA
Brussels, Belgium
Ian G. McNaught-Davis
Managing Director
Kevin Kalkhoven
Director

COMSHARE BV
The Hague, Netherlands
Ian G. McNaught-Davis
Managing Director
Roy Poulter
Director

MIROKU-COMSHARE, Inc.
Tokyo, Japan
Keisuke Suzuki
President

The IBM DCS and RCS groups
(part of the Data Processing Division,
of IBM United Kingdom Ltd,
Itself a subsidiary of IBM UK Holdings Ltd)
P.O. Box 41, North Harbour,
Portsmouth, Hampshire. PO6 3AU

Tel : 07018 21212

Turnover Fiscal year end 1976 : £ 494
Turnover Fiscal year end 1977 : £

- IBM's Data Centre Services (DCS) and Remote Computing Services (RCS) are both part of the IBM Data Processing Division such that the actual sales performance cannot be seperately identified.

- In the mid 70's the Remote Batch and Interactive Timesharing business of IBM suffered from the loss of SBC, both in terms of public image and IBM management attention to the development of the European operations remaining from the takeover.

- That phase is at an end with an aggressive growth plan in the early stages of implementation. In comparison with IBM's other European markets, the U.K. RB and T/S revenues (of $16M*) are in excess of West Germany ($12M*) but easily exceeded by those of France ($22.3M*).

- Total Computer Services revenue (including Batch Services and Software Products revenue) modify this picture substantially. West Germany is the largest market with total revenues of $38M*, followed by France $35M* with the U.K. a distant third ($24M*).

- IBM's new plan for a strong development of RB and T/S service has recently been dramatised in the specialised press by the preparation of the Warwick supercentre. This 174,000 squ. Ft office building and computer centre could eventually house as many as six 370/168's tied to a network of 80 high speed lines, interconnecting the 10 cencentrators serving the UK market.

* INPUT Estimates

LOCATION OF IBM CONCENTRATORS

****

EXHIBIT III-6

• To date only one 370/168 has gone live with the concentrators switching customers input to either Warwick or the existing 370/155's in London, used for the Terminal Business System and Call Services. Warwick will also serve as a marketing, sales and services centre HQ for the midlands.

• IBM continues to run Batch Bureaux in the South and the Midlands. At last count, these were :

CROYDON	2 X 370/158
	1 X 370/168
MANCHESTER	2 X 370/145
BIRMINGHAM	1 X 370/158
	1 X 370/135

• IBM's current hiring spree suggests however that there is to be a renewed attack by IBM on the RCS market which should be taken seriously by the top RCS vendors in the UK (Honeywell, Comshare and ADP-NIS) due to (a) the integrated education, service and support available nationwide to users of IBM's DCS/RCS services through DP Division (b) the sheer number of salesmen that IBM is acquiring and (c) IBM's image in all that it does.

• Possibly the greatest weakness in IBM's service is the lack of performance of the 370 line in the T/S environment when compared to, say, the DEC 10. IBM must of course, use only its own hardware, which in this particular operational environment puts them at a performance disadvantage.

Key Products and Services

• In April 1975, IBM announced A S (Application System). This was designed to allow users with no programming knowledge to apply CALL to his problems. Like CALL, A S is a command driven system, and runs as an integral application of CALL.

• The A S system offers several language/command modules :

- A S REPORT (used to enter report format specifications)
- A S MODEL (used to produce RPG II-like programs)
- A S FORECASTING (obvious use)
- A S GRAPH (high resolution curve plotting)

• IBM emphasizes A S as an Oliver/TABOL type language system which offers functional compatibility between the modules. Its effect is to tie users into a single problem solving language, specific to IBM, rather than offering seperate single packages which place their own learning curve demands on the user.

• Seperate packages continue to be offered on CALL, however, the main ones being :

- STATPACK (Statistical Analysis)
- PNA (Network Analysis)
- STRATPLAN (Financial Planning)

• STRATPLAN offers a variety of standard growth curves (linear, exponential, polynomial) which is dangerously simple. An unskilled user will not command an understanding of the theory behind these tools and so cannot appreciate the implications. (A professional will most likely want to build his own).

• CALL, IBM's T/S system, offers BASIC, FORTRAN and PL/1 as the main programming languages. Terminal Command Language covers the remote system communication, program entry/storage/execution and modification.

• There are four levels of library programs:

- User library (Proprietary)
- One star (Available within a company)
- Two star (All CALL users)
- Three star (IBM programs, available internationally, e.g. A S, PNA etc).

Terminal Types

- The following terminals can be used on CALL :

  - Teletype compatibles
  - Communicating Magnetic Card Typewriter
  - IBM 2740/1 (slow Keyboard Printer)
  - IBM 3767 (Keyboard printer, SDLC)
  - IBM 3770 family (diskette, programmable, SDLC)
  - IBM 2780 (RB)
  - IBM System/370 (RB in 2780 mode)

Data Centre Services

- The main service of DCS in Terminal Business System geared towards the Batch/RB user who is beginning to expand into terminal-oriented applications.

- The basic strategy of TBS is to temporarily set up the users terminal oriented applications on the IBM Data Centre and then transfer them in-house.

- DCS, therefore, is very much a staging post for IBM systems that are either being expanded or installed first time.

- There are four grades of RB services :

  - Fast (Processed within 15 minutes of queue entry)
  - Normal (Processed within 2 hours of queue entry)
  - Overnight (Self explanatory)
  - Deferred (Processed within 7 days of request or to an agreed schedule)

- Utilities include File Definition, File Loading, File Enquiry, Report Writer, File Maintenance and Utility Printing. Parameter commands such as Record and File parameters and Application Job parameters describe the content and sequence of data and processing.

• For conversational processing, Conversational Job Language (CJF) offers a language to analysts and programmers to describe the entire process they wish to accomplish. The program is then translated by a system utility and stored for retrieval/ execution.

IBM U.K. Ltd Organisation

• DP Division integrates DCS and RCS. To follow the trend in IBM's market thinking, a comparison of the 1974 and 1977 organisation charts is therefore instructive. In 1974 there were five so-called "Districts" with five to six branches each :

- Government District

* Government Branch (Central Dpts, MOD, Universities and Research)
* Transport & National Enterprises (Surface/Air transport, CEGB & P.O.)
* Government South (Local Gov./Educ., Public utilities and Medical in the Southeast)
* Midlands Government (Same in Midlands)
* North West Government and Finance (Same in North and West plus Finance in NW & Midlands)

-Finance District

* Central Banking
* London Banking (The main clearing banks)
* Insurance Branch (Insurance in the South)
* Finance Branch (Other Finance houses in the South)
* Edinburgh (All financial institutions in Scotland)

- Commercial District

* London Distribution (Retail, Wholesale, Consumer packaged goods, textiles)
* London City Commercial (Conglomerates, printing, publishing and services)

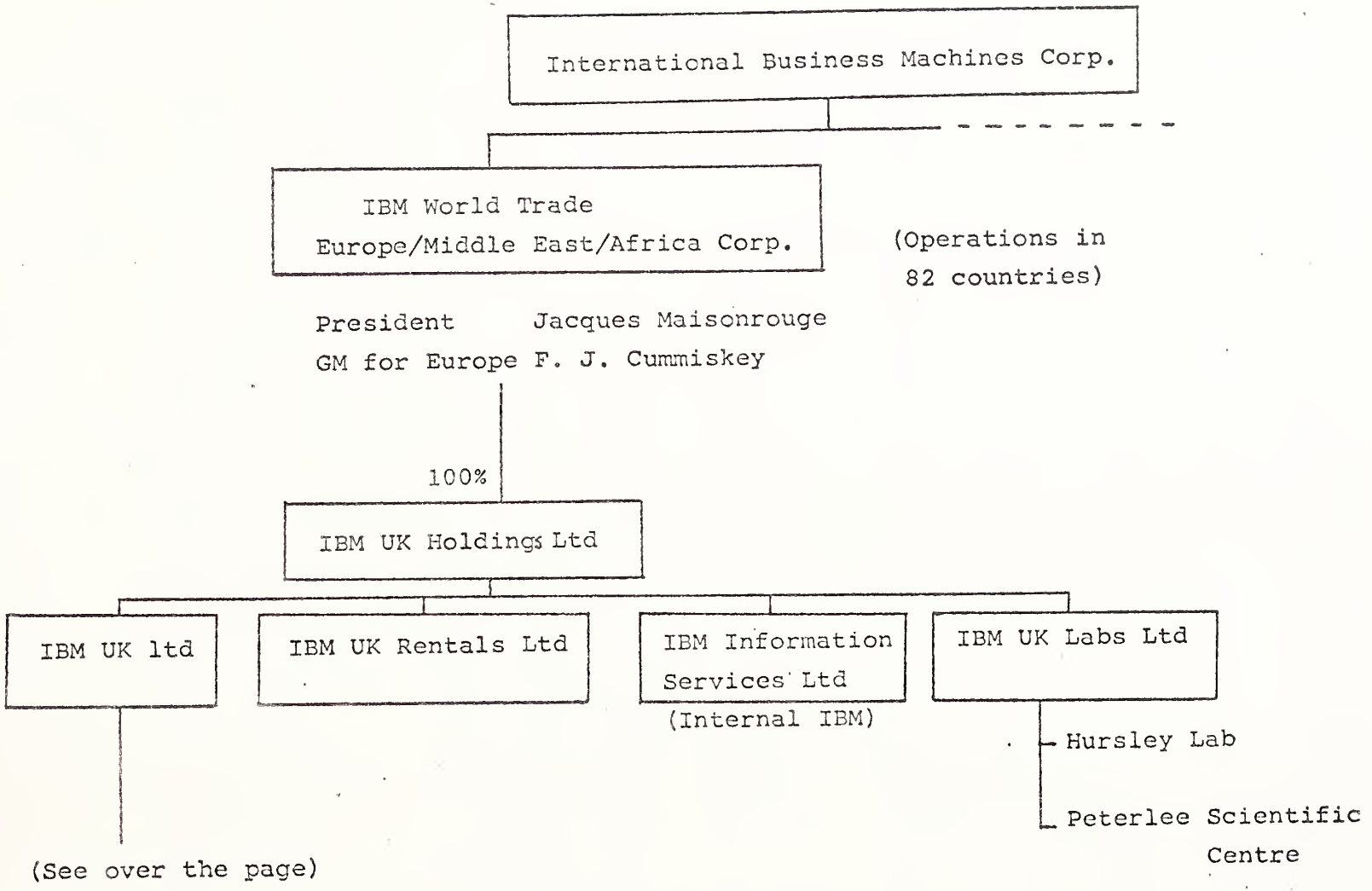


EXHIBIT III-7

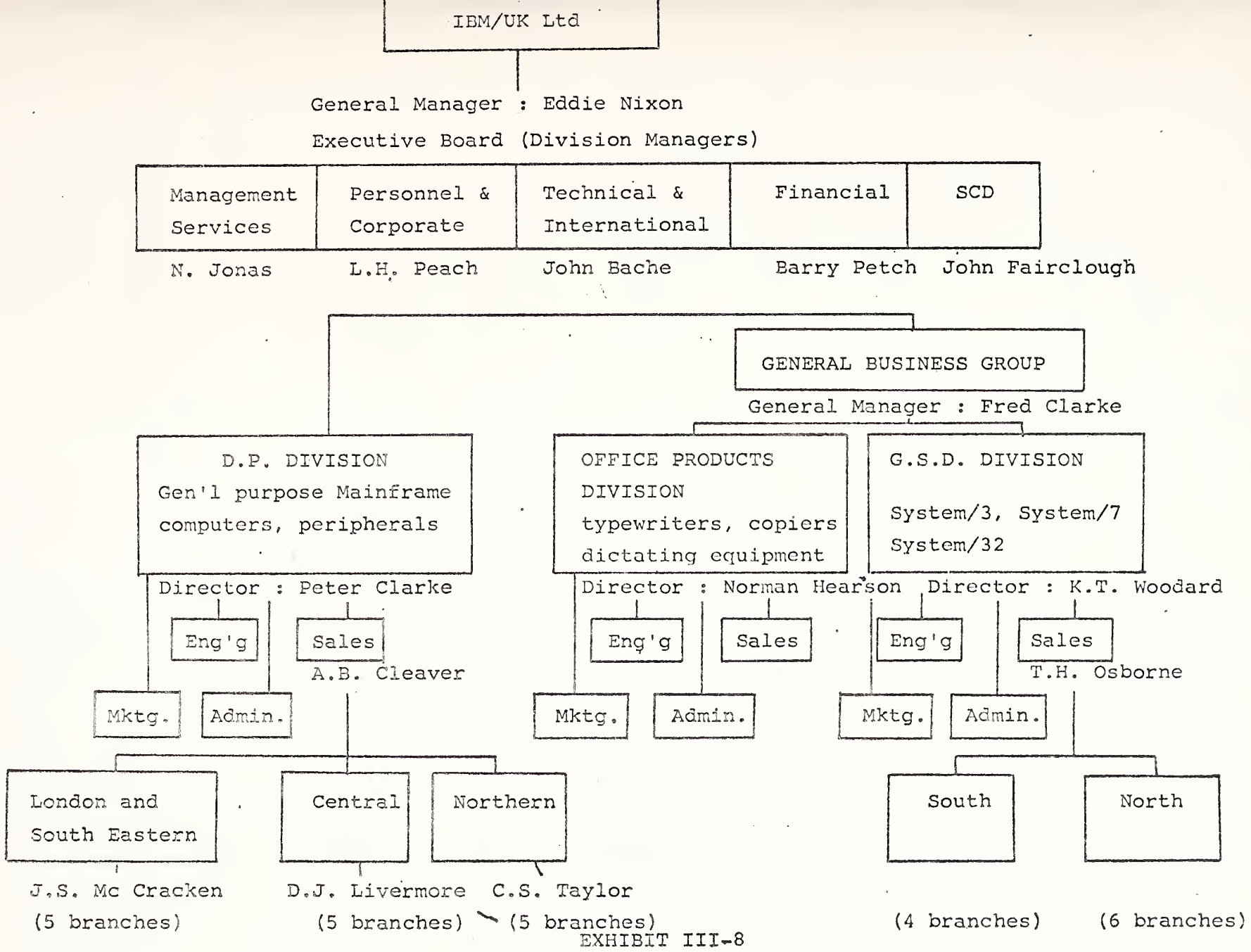


EXHIBIT III-8

* Midlands Commercial (All the above in the Midlands)
* NW Commercial (All the above in NW)
* Leeds Commercial (All types of business)
* Scottish Commercial (All except finance business in Scotland)

- Manufacturing District

* London South Manufacturing
* London North Manufacturing
* North West Manufacturing
* Midlands Manufacturing Mainly automotive business
* Midlands Industrial Other Manufacturing customers in Midlands
* North East Manufacturing All business in NE

- GSD District

* Croydon Branch
* Richmond Branch
* Welwyn Branch
* Birmingham Branch
* Bristol
* Glasgow
* Manchester
* Nottingham

o In 1977 this structure was completely overhauled, the 22 branches being reduced to 15 by essentially integrating the industry sector responsabilities into geographically oriented branches. The one exception is Banking which is reduced from twobranches (London and Central) to one (London).

o Now each branch has industry specialist units for each of Government, Insurance, Finance (houses and institutions), Distribution, Printing/Publishing and Manufacturing, where this makes sense geographically.

o The result is an "all things to all people" approach matrixing mainframe hardware and peripherals, terminals, services (whether as an add-on to hardware or as a replacement for an in-house system) and industry expertise.

o IBM's new DP Division sales organisation is as follows :

DP DIVISION

Director, DP Division P.C. Clarke
Sales Manager DP Division A.B. Cleaver

LONDON AND SOUTH EASTERN REGION

Manager, J.S. Mc Cracken

	Manager
South Eastern Branch	J.G. Tilt
South London DP Branch	N. Tonkin
North London DP Branch	A. Brace
London City Branch	H. Mackay
London Banking Branch	J.W. Nicoll

CENTRAL REGION

Manager, D.J. Livermore

Eastern DP Branch	H.W. Grotefeld
Central Southern DP Branch	P.A. Morrison
South Western DP Branch	R.H. Marriott

GS DIVISION

Director, General Systems Division K.T. Woodard
Sales Manager, General Systems Division T.H. Osborne

GS DISTRICT - SOUTH

Manager, I. Ash

	Manager
London Wall Branch	J. Eddon
London North GS Branch	J.F. Shave
London South GS Branch	I. Gillepsie
South West GS Branch	J. Griffiths

GS DISTRICT - NORTH

Manager, J. Mc INtyre

Scotland GS Branch	J. Harrington
North West GS Branch	J. Hemsley
West Midlands GS Branch	D. Tassell

Pricing structure

• The service pricing for CALL is given in attachment. However, other price data includes :

- Generalized "How to" educational courses are free of charge
- Specialisation/in-depth courses begin at £185 each
- Programming is charged at £23/hour.

Standard terms and Conditions (see attached)

IBM UK HOLDINGS LTD - DIRECTORS

The Rt. Hon. The Earl of Cromer (Chairman)

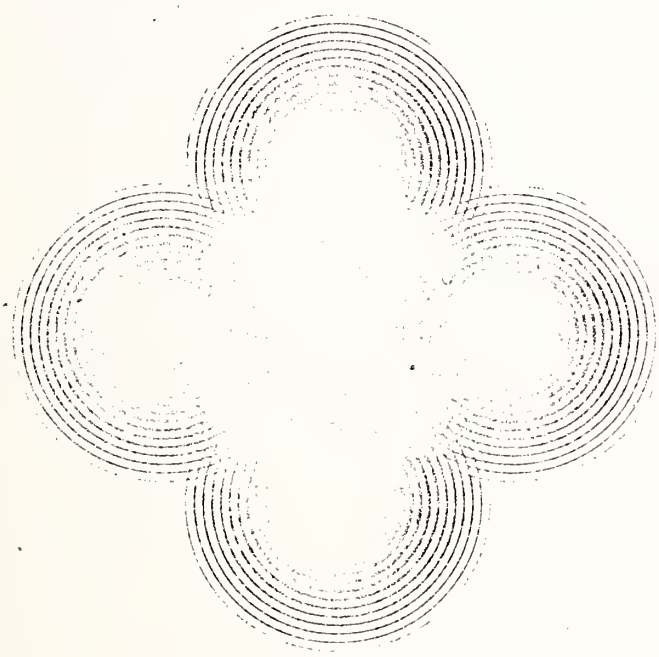
* E.R. Nixon (M.D.)
* J.R. Bache
  Sir Edward Bullard
  Rt. Hon. Lord Chalfont
* F. Clarke
* P.C. Clarke
  J.W. Fairclough
  G.E. Jones
  Rt. Hon. Lord Luke
  J.G. Maisonrouge
* B.I. Petch
  Evelyn de Rothschild
  A. Russel
  G. Van der Woude

* = operational

Fact sheet

PRICES

CALL



These prices are effective as of 1 October 1977.

Invoicing and Contracts
Customers will be invoiced on a monthly basis for services and terminals in accordance with their CALL agreements. The current price list is shown below.

Services

Central Processing Time
Based on the number of processing units recorded by the system as having been used by the central processing unit in carrying out instructions or other work on behalf of the customer. A processing unit is equal to 0.263 CPU seconds on the System/370 Model 155.

Standard	15.38 pence per unit
Deferred	7.68 pence per unit

Terminal Connect Time
Connect time is recorded from successful sign-on to sign-off from the Service.

10 & 15 characters per second	£ 5.50 per hour
30 characters per second	£ 8.50 per hour
1200 baud (IBM 2780 support)	£21.40 per hour
Walk-in at 15 characters per second	£ 8.95 per hour

Direct Access Storage Library
Recorded as storage units (each of 3440 characters) of the Direct Access Storage facility. The charge is assessed on the average number of storage units stored overnight during the month for each sub-identification number.

First 200 units	£0.67 per storage unit per month
201-400 units	£0.50 per storage unit per month
401-800 units	£0.38 per storage unit per month
Over 800 units	£0.28 per storage unit per month

Charges will be applied consecutively, i.e. a total of 250 units would be charged as 200 at £0.67 plus 50 at £0.50.

Terminals

IBM 2741 Communication Terminal with IBM 5970 Modem Adapter Unit – £68.10 per month.

The IBM Communicating Magnetic Card Typewriter (CMCT) with built-in Modem Adapter Unit – £167.00 per month.

IBM 3767 Communicating Terminal with built-in Modem Adapter Unit – £137.70 per month.

On-Line Centre Services

Lines printed 1-4000	£1.70 per 1000 lines
4001 & above	£1.35 per 1000 lines
Cards read	£3.00 per 1000 cards
Cards punched	£10.40 per 1000 cards
Magnetic tape read/written	£4.95 per 100 units (one unit = 3440 bytes)
Tape mount	£3.90
File recovery from back up tapes	£36.50 per run

All materials will be charged at current rates.

AMC Discounts

Discounts are available if a customer commits to certain Annual Minimum Commitments of net expenditure. These discounts apply to Central Processing Time, Terminal Connect Time and Direct Access Storage. Full details are available from the IBM representative.

Post Office Equipment

A customer will require a modem and a talk/data telephone, available on rental from the Post Office. A one-time charge is usually levied by the Post Office for the installation of the telephone line and modem. Use of the line is charged for at normal dialling rates. Details of all these charges can be obtained from the Post Office Area Sales Office.

Education

CALL courses of general interest are provided free of charge, but a charge is made for the more specialised courses. Full details are available in the Customer Education manual or from your IBM representative.

All prices are exclusive of Value Added Tax which will be added at the appropriate rate.

The prices quoted are currently in effect but are subject to change in accordance with the terms of the CALL Agreement.

CALL Centre
IBM United Kingdom Limited
40 Basinghall Street London EC2P 2DY

UK Form 22-7200-09 (10/77)
Printed in England by
Drydens Printers Limited, London NW10

LIMITATION OF LIABILITY

14 – The Customer's remedies for a breach of this Agreement (whether in contract or in tort) shall be limited to damages which shall not exceed the greater of the minimum charge or the total amount payable for the Service for the Stated Period. The foregoing limit to the amount of damages shall not apply to any such damages in respect of direct physical injury to persons or direct physical damage to tangible property caused by IBM's negligence.

15 – In no event will IBM be liable for any loss of profits or for damages in respect of special, indirect or consequential loss even if IBM has been advised of the possibility of such loss or damages. IBM will not be liable in respect of any claim against the Customer by any other party. Except as expressly set forth in this Agreement, all representations, conditions or warranties, express or implied, statutory or otherwise (including, but not limited to, any concerning the fitness of the Service for a particular purpose) related in any way to services are excluded.

16 – IBM shall not be liable for failure to provide the Service due to causes beyond its control.

GENERAL

17 – In the event of either party failing to comply with any of the terms and conditions of this Agreement, the other party shall request in writing the defaulting party to remedy the breach within a reasonable and specified time. If such breach is not so remedied within that time, the other party shall have the right to terminate the Agreement forthwith.

18 – All disputes arising out of or relating to this Agreement shall be referred to the arbitration of two persons (one to be appointed by IBM and one by the Customer) or their Umpire in accordance with the provisions of the Arbitration Act 1950 (or any statutory amendment or reenactment thereof).

19 – The terms and conditions of this Agreement shall prevail notwithstanding any variance with the terms and conditions of any order or contract submitted by the Customer in respect of the Service. This Agreement, which shall be governed by the laws of England, constitutes the entire Agreement between the Customer and IBM and shall supersede all proposals oral or written, and all other communications between the Customer and IBM relating to the subject matter hereof. No waiver, alteration, modification or addition to this Agreement shall be valid unless made in writing on or after the signing of the Agreement and accepted by an authorised signatory of IBM's Head Office.

	IBM United Kingdom Limited
Signed	Signed
Position	Position
Date	Date

To be returned to IBM
by

Standard Terms and Conditions – System Usage Service

SERVICES

1 – The Customer is responsible for determining that the Service is appropriate to his intended use, and that the Customer's arrangements for back-up data are adequate for his purpose. The Customer accepts sole responsibility for the adequacy and accuracy of his source data, instructions, programs and/or procedures. The Customer agrees to establish the audit controls, edit functions, operating procedures and check points appropriate to his intended use of the Service. The Service will be made available in accordance with IBM's schedule, subject to planned holidays at the IBM processing centre.

2 – The Customer accepts sole responsibility for the operation of the system, and agrees to indemnify IBM and to hold it harmless from any loss or liability to the Customer or to any third parties for any injuries or damages, not caused by IBM's negligence, which result from the Customer's use of the system, data, programs or IBM premises or premises which IBM is authorised to use.

3 – The system will be turned over to the Customer in good working order. Any subsequent maintenance and repair of the system will be done by IBM. For this purpose, IBM's representatives shall have full and free access to the system. Charges for repair or replacement due to the negligence of the Customer will be borne by the Customer.

4 – The Customer will provide his own qualified operators to operate the system. However, depending upon availability, IBM will furnish at the Customer's request qualified operators to assist his personnel in the operation of the system at IBM's established rates. All personnel furnished hereunder by IBM will be under the direct supervision of the Customer, and the Customer accepts full responsibility for the results produced by such personnel.

5 – Any data media furnished by the Customer in order that IBM may provide the Service must be compatible with IBM's equipment and must be in good condition for machine processing. IBM will not be liable for damage to data media provided by the Customer, or damage to Customer processing arising therefrom, in the absence of acclimatisation where recommended by IBM for such data media.

6 – The Customer shall be responsible for the delivery and collection at his expense of all data submitted to IBM for processing and all output produced. The Customer agrees to accept the risk of loss or damage during transit to or from his premises.

7 – In the event that the Customer provides program material, for use with the Service, in relation to which rights are owned by third parties, the Customer warrants that:

He has any necessary permission, express or otherwise, to enable such program material to be copied and modified and run on the system during the course of the Service without infringing any third party copyright.

In furnishing the Service IBM will not be infringing the rights of any third parties.

The disclosure or use of the program material during the course of the Service will not involve a breach of any confidential or contractual relationship.

Moreover, the Customer agrees to indemnify IBM against damages arising from any breach of those warranties.

8 – IBM agrees that it will, at its expense and as promptly as possible, provide processing facilities for the correction of any processing errors which are due solely to machines or data media furnished by IBM under this Agreement, or to IBM personnel not under the Customer's control, provided that the data necessary to correct such errors is available, up to the maximum specified herein.

9 – IBM shall have the right, without liability to the Customer, to make such configuration or other changes to the Service including relocation of machines, as it may deem necessary or desirable but will give the Customer at least three months prior written notice of any such change that would require substantial modification to the Customer's procedures then being used. In the event that such substantial modifications are required, the Customer may elect to terminate this Agreement not earlier than the effective date of such configuration or other changes by giving written notice not later than one month prior to that date.

CHARGES

10 – All charges under this Agreement are exclusive of Value Added Tax, which will be charged at the appropriate rate. In addition to the charges quoted for processing, all required tapes, disks, cards and other supplies, and any additional work requested by the Customer, will be charged at IBM's established rates. IBM may invoice the Customer monthly and the Customer agrees to pay, within 30 days net from the date of the invoice, the invoiced charges plus amounts equal to any taxes or duties, or amounts in lieu thereof, paid or payable by IBM, however designated, levied or based on such charges or on this Agreement or the services or supplies furnished hereunder, excluding, however, taxes assessed on profits.

11 – Except as otherwise specified herein, the quoted charges may be increased by IBM upon three months prior written notice. In the event of such increase the Customer may terminate the Agreement not earlier than the effective date of the increase by giving written notice not later than one month prior to that date.

12 – The Customer agrees to reimburse IBM for any miscellaneous expenses reasonably incurred by IBM in providing services under this Agreement.

13 – In the event of termination of this Agreement under the provisions of Clause 9 or 11, any minimum charge hereunder shall be pro-rated to the date of such termination.

Schedule J

TERMINAL EQUIPMENT SERVICE

IBM United Kingdom Limited agrees to furnish to the Customer and the Customer agrees to take upon the terms and conditions herein the equipment listed in the attached Terminal Equipment Table(s) (hereinafter called 'terminal' or 'terminals') for use in connection with the Services described in this Agreement.

TERMS AND CONDITIONS

In addition to the Standard Terms and Conditions of this Agreement the following terms and conditions apply in respect of the services specified in this Schedule J.

CHARGES

1 – Monthly Charges

The Monthly Charges shown in this Schedule are those currently in effect and are subject to increase by IBM upon prior written notice in accordance with the Terminal Equipment Table. In the event of such increase, the Customer may elect to discontinue the affected terminal or discontinue that terminal together with the associated processing Service under this Agreement, not earlier than the date of the increase by giving written notice not later than one month prior to that date. If charges for a terminal are decreased, the Customer shall have the benefit of the lower charges.

All charges shall commence in each case the day following that on which each terminal is installed ready for use. Monthly availability charges for each month will be invoiced on the first of that month.

When a terminal is installed or discontinued during a calendar month, monthly charges for the partial month during which the terminal has been installed will be prorated on the basis of the number of days in the month.

2 – Maintenance Expenses

Unless a terminal is located in a place where IBM has regular maintenance representation, the Customer agrees to pay all travelling expenses of IBM's representatives for maintenance and repair of that terminal, or a Zone Charge where such is specified in the Terminal Equipment Table. Additionally, for service rendered for any terminal at the Customer's request, subject to availability, outside IBM's normal business hours, the Customer agrees to pay travel expenses plus travel and labour time at IBM's established rates.

3 – Transportation Charges

In addition to the monthly charges shown on this Schedule, the Customer agrees to pay all costs of transportation and any special handling of terminals arising from their delivery to his premises and their return to IBM.

PACKAGING

4 – The Customer will furnish any labour as may be necessary for packing and unpacking the terminals when in possession of the Customer. Necessary packing cases for the return of the terminals and a representative to supervise the packing will be furnished by IBM without charge.

TERM

5 – The minimum period of installation of a terminal under this Agreement is three months. The minimum period of notice of discontinuance of terminal rental is one month, to be effective not earlier than three months from the date of installation.

ADDITIONAL OR REPLACEMENT TERMINALS

6 – IBM terminals in addition to or in replacement of any terminal provided under this Agreement will be furnished, if available, to the Customer on IBM's terms in effect on the date of order and at the charges in effect on the date such terminals are installed ready for use.

MAINTENANCE

7 – IBM will maintain the terminals as set forth under the 'Warranty' clause herein but shall not be responsible for failure so to maintain the terminals due to causes beyond its control. For this purpose representatives of IBM shall have full and free access to the terminals. Suitable electric current to operate the terminals and a suitable place of installation with all facilities will be furnished by the Customer, in accordance with the physical planning requirements specified by IBM.

8 – Upon prior written notice to IBM, alterations in or attachments to the terminals may be made. If the alteration or attachment interferes with the normal and satisfactory operation or maintenance of any of the terminals in such a manner as to increase substantially the cost of the maintenance thereof, or create a safety hazard, or in such manner as to impair the Services provided hereunder, the Customer will, upon notice from IBM to that effect, promptly remove such alteration or attachment and restore the terminals to their normal condition.

IBM WARRANTY

9 – The terminals will be in good working order at the date of installation and will conform to IBM's official published specifications at such date. IBM will make all adjustments, repairs and parts replacements necessary to maintain the terminals in good working order, with the exception of type ribbons, the cost and replacement of which shall be the responsibility of the Customer. All terminals are supplied subject to these warranties. IBM's obligation under this Schedule is limited to repair and replacement of any parts or terminals when IBM determines that they do not conform to these warranties.

RISK OF LOSS

10 – During the period the terminals are in transit or in the possession of the Customer IBM and its insurers, if any, relieve the Customer of responsibility for all risks of loss or damage to the terminals, except loss or damage caused by nuclear reaction, nuclear radiation or radioactive contamination for which the Customer may be otherwise legally responsible.

LIABILITY

11 – IBM will accept liability in connection with the terminals for direct physical injury or direct physical damage to persons or property on the premises where the terminals are installed which is caused by the negligence of IBM or its employees provided that IBM shall under no circumstances be liable for any loss of business profit or for any other consequential loss whether or not arising from such injury or damage.

12 – The Customer acknowledges that IBM will not be liable for any loss, damage or injury caused by the Customer's negligence or failure to fulfill any Customer responsibilities set forth in this Schedule or otherwise accepted by the Customer.

RESPONSIBILITIES OF THE CUSTOMER

13 – The use of the terminals is under the exclusive management and control of the Customer, who is responsible for ensuring the proper use, management and supervision of the terminals, including the Customer responsibilities stemming from the 'Maintenance' clauses herein. Any cards or other media used to operate the terminals are to meet IBM's specifications.

GENERAL

14 – Terminals may not be removed by the customer from the locations listed in this Schedule without the prior written consent of IBM. All movements of terminals to or from the said locations will be by means specified by IBM and in accordance with IBM's established transfer charges.

15 – None of the terminals subject to this Schedule may be sublet, assigned or transferred by the Customer without the prior written consent of IBM. Any attempt to sublet, assign or transfer the terminals without IBM's written consent is void. All terminals remain the property of IBM and are a part of the Services provided in this Agreement. Each terminal must be returned immediately to IBM upon the termination of either this Agreement or this Schedule or upon the discontinuance of such terminal from this Schedule.

IV COMPANY GROUP ANALYSIS

IV-I INDUSTRIAL COMPANIES-TIMES TOP 50

• Exactly 50% of the Top 50 UK Industrial companies responded to the survey, evenly spread throughout the group. Cooperation was good as was the quality of the response.

• There is still some confusion in the minds of these users as to what precisely can be classified as a computer system as opposed to a terminal system. For the sake of consistency, the doubtful systems were classified as the users see them.

• Many of these particularly large companies are highly decentralised and are comprised of very large numbers of subsidiaries. This necessitated the execution of "mini-mail shots" that addressed each of the subsidiaries belonging to each group, since a "corporate" response would have been meaningless.

• Among the Top 50 companies, two were addressed individually in this manner :

- General Electric Company
- Hawker Siddeley Group

• While corporate response to a demand for information can be easily monitored and prompted, this is not possible with a group of up to 120 subsidiaries per company. Response rates to these "mini" mail shots were therefore patchy and slow to be accomplished.

In-House Hardware Usage

• An astonishing 17% of respondents in the Times Top 50 Industrial Companies have no internal EDP equipment (although none were found that made no use of EDP at all ; clear demonstration of the possibility of replacing in-house computers by outside services). It must also be added that some of the sample respondents are subsidiaries rather than corporate entities.

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER (PRINCIPAL)

TOTAL SAMPLE: 25 RESPONSES (50%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	BURROUGHS	NCR	ICL	OTHER
QUANTITY	NONE	17	8	4	13	13				8	13	8
	≤5		8	4							8	4
	>5 ≤10			4								4
	>10 ≤20											
	>20			17	25	29	13	4	8		17	21
SUPPLIER	IBM			8	4	13						
	Honeywell				8		8					
	Burroughs			4					4			
	ICL		4	8	8						21	
	Olivetti				4	4						
	ITT				4	4						
	Data 100				4	4						
	Harris			4		4						
	Hazeltine			4					4			
	Nixdorf			4								4
	Other		4	4	8	4						13

EXHIBIT IV-1

ACTIVITY: INDUSTRIAL

GROUP: Times Top 50

• In addition to the non-users there is a high proportion of these very large companies that have relatively small systems e.g. ICL 1902T in Imperial Group, Ventek Datapoint 2200 in Tube Investments etc. However, despite INPUT's clear demands for corporate level response on equipment and services usage, some respondents gave only "head office" data. Bass Charrington is an example.

• A summary of the installed computer market shares is given below :

VENDOR	% having at least one system from the vendor	% market share Times Top 50 by number
IBM	42	28
ICL	38	25
HONEYWELL	13	8
BURROUGHS	8	6
NCR	8	6
UNIVAC	4	3
Other	37	24

• Exhibit IV-1 opposite enables the hardware usage to be viewed from the mainframe or central processor viewpoint (e.g. which terminal types are connected to IBM CPUs - by reading vertically) and also from the terminal standpoint (e.g. to whose processors are ITT terminals connected).

• Significantly, there were more installations having non-IBM terminals connected to IBM processors (ITT, Data 100, Olivetti etc) than there were having IBM-only terminals. At Cadbury Schweppes, 81% of the terminals are Harris 3270-compatible devices while IBM's own 3270 can only score one tenth of the installation.

• Due to the multiple vendor sites, the Exhibit percentages do not always total 100. The percentages given are in terms of a vendor's "presence". Thus 21% in the ICL terminal column means that ICL terminals are found in 21% of the Times Top 50 installations.

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TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

TOTAL SAMPLE: 25 RESPONSES (50%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K < 5K	≥ 5K < 12K	≥ 12K < 25K	≥ 25K	TOTAL
BATCH	Growth		7		7	27	41
	Decline			7		7	14
REMOTE BATCH	Growth		13	7		27	47
	Decline						
INTER-ACTIVE	Growth	7	13			40	60
	Decline					7	7

EXHIBIT IV-2

ACTIVITY: INDUSTRIAL

GROUP: Times Top 50

- There are some sizeable installations in this group. Thorn Electrical has 48 computers and 63 terminals while one subsidiary of GEC (Elliott Marconi) alone has 125 terminals on IBM/370/148, 158s.

Trends in Computer Services Expenditures

- In all three categories of services expenditure examined (Batch, Remote Batch, and Interactive Timesharing), the number of sites forecasting growth exceeds those who anticipate a decline in usage. It must be remembered that Exhibit IV-2 and all similar charts to follow, include only those who are currently users.

- The expenditure distribution between the three categories is approximately equal in number of sites and size of site expenditure. There is a higher proportion of companies expecting to decrease their Batch expenditures than in any other category, as would be expected.

- The large computer services user at this level is not a stable client of processing power. His specific needs must be addressed, packaged in a proprietary manner, if the user base is to develop in a stable fashion.

Application Usage and Trends

- Attention to this particular aspect of the services business is therefore crucial. The present study stops short of identifying the specific, branch-related applications that users are looking to acquire. However, it does pin-point the application groups that are attracting most attention within each company group examined, (Exhibit IV-3).

- By far the most popular of all six application categories surveyed in terms of usage, was the General Accounting/Payroll group ; in growth, however, this is outstripped by both Production/Inventory control requirements and Financial Analysis and Planning needs.

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APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 25 RESPONSES (50%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	44		32
B	68		68
C	64		56
D	52		56
E	88		52
F	60		68
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-3

LEGEND

A= Engineering/Scientific
B= Production/Inventory
C= Marketing/Sales
D= Personnel
E= General Acctg/payroll
F= Financial Analysis and Planning
G= N/A
H= N/A
J= N/A

ACTIVITY: INDUSTRIAL

GROUP: TIMES TOP 50

- All application areas showed growth prospects with a moderate forecast for only Engineering and Scientific requirements. The study did not allow the identification of the percentage growth for each respondent, however, so that conclusions should not be hastily drawn on any application.

Batch and Remote Batch Services Usage

- Usage of both of these types of services (Exhibit IV-4 and 5) is light and spread over the whole spectrum of suppliers. No single supplier dominates, except in rare cases, (e.g. GEC's own subsidiaries using the GEC service centre).

- Computel, Compower, IBM and Baric are the only notable suppliers of these services categories in the Times Top 50 group.

- Increases in usage forecast by users in both Batch and Remote Batch categories are in the 5-20%, whereas Batch declines are much higher (20-50%). Unigate and S & W Berisford are two examples of this latter trend, while British Leyland, an IBM Services client, anticipates the largest increase in both categories with the exception of GEC Distribution who plans a 200% increase in Remote Batch services expenditures.

Interactive Timesharing Usage

- Timesharing is far more prevalent a service than Batch and Remote Batch in the Times Top 50 companies, being twice as popular as Batch and 60% more than Remote Batch services.

- Growth prospects are in the 20-50% range with GEC Elliott Control Valves and Allied Breweries anticipating the highest growth.

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BATCH SERVICES USED BY

SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 25 RESPONSES (50%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% <10%	≥10 <25%	≥25 <50%	≥ 50%
B O C						
BARIC			8			
CDC						
CMG						
ADP – MD						
GEEST						
COMPUTEL			4		4	
COMPOWER			4			
IBM			4			
OTHER	4			4		

EXHIBIT IV-4

ACTIVITY: INDUSTRIAL

GROUP: TIMES TOP 50

INPU

- Exhibit IV-6 portrays the patchy coverage of all Timesharing vendors in this most important group, with no one clearly emerging as a leader.

- Gueest Keen & Nettlefolds, a client of COMSHARE (80%) and HIS (20%), anticipates a 90% drop in Timesharing expenditures, however.

- COMSHARE, IBM and Honeywell in that order, are on the strength of the response, the primary suppliers of Timesharing to the Times Top 50 with ADP-NIS, Atkins On-line, CRC and I.P Sharp getting a mention.

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REMOTE BATCH SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 25 RESPONSES (50%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5%<10%	≥10%<25%	≥ 25 < 50%	≥ 50%
CENTREFILE						
UCC						4
SIA						
UCSL						
IBM				4		
COMPOWER			4			
COMPUTEL			4	4		
SCICON						
CDC						
LOWNDES-AJAX						
OTHER	4					
GEC						8

EXHIBIT IV-5

ACTIVITY: INDUSTRIAL

GROUP: TIMES TOP 50

INPU

INTERACTIVE SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 25 RESPONSES (50%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% < 10%	≥ 10 < 25%	≥ 25 < 50%	≥ 50%
HIS	4			4		
COMSHARE				4	8	4
ADP–NIS					4	4
IBM	4				4	4
CRC						
ATKINS ON-LINE				4		
CDC						
I.P.SHARP					4	
TYMSHARE						
OTHER				4		8

EXHIBIT IV-6

ACTIVITY: INDUSTRIAL

GROUP: TIMES TOP 50

INPUT

IV-2 INDUSTRIAL COMPANIES-
TIMES 51-200

- Companies listed in the Times 51-200 industrial groups responded well to the survey (39%). Included in this group was one "mini-mail shot" to British Electric Traction.

- In this group the increased use of EDP systems is noticeable compared to the Times Top 50, with multiple system sites becoming the norm.

In-House Hardware Usage

- The distribution of non-users, single system, double system and multiple system users is similar to that of the Times Top 50 :

	None	Single	Double	Multiple
Times Top 50	17	16	29	38
Times Top 51-200	17	22	18	43

- The Times Top 50 systems represent a clear dichotomy in terminal usage (48% none at all, 40% more than twenty per site) while the distribution in the 51-200 group is more regular (32% none, 27% more than twenty and an even spread of smaller clusters).

- In this group the installed computer market share is as follows :

VENDOR	% having at least one system from the vendor	% market share Times 51-200 by number
ICL	44	31
IBM	38	26
BURROUGHS	12	8
DEC	11	7
HIS	7	5
UNIVAC	5	4
Other	27	19

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURE

(PRINCIPAL)

TOTAL SAMPLE: 58 RESPONSES (39%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	ICL	BURR	DEC	OTHER
QUANTITY	NONE	17	10	2	3	5	2	2	3	5	2	5
	≤5			2	5	2			5			5
	>5 ≤10		5	4	7	10			5	2	2	7
	>10 ≤20		2	3	9	9			9	3	2	3
	>20		5	7	19	12	5	3	22	2	5	7
SUPPLIER	ICL		3	3	22	2			28			3
	ITT		2		3	3			3			
	IBM		5	3	10	19						
	SANDERS		2			2						
	OLIVETTI			2	2	2			2			
	TI				2							2
	COSSOR		2		2	3			2			
	HIS		3		2		5					
	BURROUGHS			2	2					3		
	UNIVAC			2				2	2			
	OTHER			3	17	9	2		5	2		12

EXHIBIT IV-7

ACTIVITY: INDUSTRIAL

GROUP: TIMES 51-200

- Exhibit IV-7 opposite confirms the pattern of system usage that emerged from the Times Top 50 : ICL clearly leading in market share ; IBM taking second place and Burroughs a distant third.

- Again, there are far more IBM sites with alternate vendor terminals than with IBM-only terminals (not the case with any other vendor). One site stands out in this regard : Scottish & Newcastle Breweries have 180 Raytheon Cossor terminals on their IBM 370/158 and only 20 IBM terminals.

- At this level it is frequently the case that subsidiaries of the large corporate concerns do not use any form of EDP equipment or services. In today's market of decentralised data processing systems, this section of the UK market is a prime candidate for a drive to reduce this percentage.

- Olivetti, Cossor and ITT continue to be successful in providing terminals to IBM and ICL mainframes sites, as in the Times Top 50 group.

Trends in Computer Services Expenditures

- Growth for services in this group of companies is already weaker than the Times Top 50, with a high proportion of Batch Services users forecasting a decline in usage. It must be remembered that only users are included in Exhibit IV-8.

- Forecasted growth in Batch Services ranges from 5-20% with decline forecasts in the 10-25%. For Remote Batch Services, growth ranges from 5 to 40%. The exception to this pattern is BTR Ltd, an IBM and LowndesAjax user who is planning a 30% decline in usage. For Interactive Timesharing, growth plans tend to be in the 10-35% range with an exceptional 400% growth planned by Scottish and Newcastle Breweries, a 100% IBM user.

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TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

Note : includes users only

TOTAL SAMPLE: 58 RESPONSES (39%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K < 5K	≥ 5K < 12K	≥ 12K < 25K	> 25K	TOTAL
BATCH	Growth				3	34	37
	Decline	3		3		10	16
REMOTE BATCH	Growth	3		3	3	24	33
	Decline					3	3
INTER-ACTIVE	Growth	3		7	7	38	55
	Decline					14	14

EXHIBIT IV-8

ACTIVITY: INDUSTRIAL

GROUP: TIMES 51-200

Application Usage and Trends

- In all application categories examined, growth in usage is planned, to varying degrees. The usual General Accounting/ Payroll category polled the highest percentage of present users (see Exhibit IV-9) but again Financial Analysis and Planning topped the expansion list.

- Marketing /Sales applications (i.e. Sales forecasting, Market sales planning etc) also attracted a strong response as did the Product Control/Scheduling, Quality Control, Inventory Control, Numerical Control group of applications labelled as "Production/Inventory".

- Applications usage, more than any other factor, will be the fundamental driving force behind expanded usage of in-house computers and external services.

Batch Services Usage

- Batch Services draw significant business from the Times 51-200 group of companies with a fairly even distribution of users between Baric, Computel, IBM, Geest and ADP.

- The "other" category refers mainly to Midland Bank pay service, Lloyds pay service and MCS (Centrefile).

Remote Batch Services Usage

- The main contenders for the Remote Batch market in this group of companies are IBM, Computel and Lowndes Ajax. Usage is light by any standards and expansion opportunities are good.

- "Other" refers to GMS (who use GMS Computing Ltd) and Honeywell (Redland Ltd).

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APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 58 RESPONSES (39%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	47		38
B	62		62
C	71		64
D	52		52
E	84		53
F	67		69
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-9

LEGEND

A=Engineering/Scientific
B=Production/Inventory
C=Marketing/Sales
D= Personnel
E= General Acctg/Payroll
F= Financial Analysis and Planning
G= N/A
H= N/A
J= N/A

ACTIVITY: INDUSTRIAL

GROUP: TIMES 51-200

BATCH SERVICES USED BY

SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 58 RESPONSES (39%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% <10%	≥10 <25%	≥25 <50%	≥ 50%
B O C				2		2
BARIC		2		5	2	
CDC		2		2		
CMG					3	
ADP – MD		3			2	
GEEST			2		2	
COMPUTEL	2	2		2		
COMPOWER			2	2		
IBM			2	2	2	
OTHER	2		9	3	5	
NAT WEST	2					
SIA	2					
CENTREFILE			2			2

EXHIBIT IV-10

ACTIVITY: INDUSTRIAL

GROUP: TIMES 51-200

INPUT

REMOTE BATCH SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 58 RESPONSES (39%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5%<10%	≥10%<25%	≥25 < 50%	≥ 50%
CENTREFILE						
UCC	2					
SIA				2		
UCSL						
IBM	2			2	2	
COMPOWER						
COMPUTEL	2			2		
SCICON				2		
CDC						
LOWNDES-AJAX					2	2
OTHER		2		2		2
HIS	2					

EXHIBIT IV-11

ACTIVITY: INDUSTRIAL

GROUP: TIMES 51-200

INPU

INTERACTIVE SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 58 RESPONSES (39%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		<5%	≥5% <10%	≥10 <25%	≥25 <50%	≥ 50%
HIS	2	3		3	2	3
COMSHARE			2	9	2	
ADP–NIS		2	2	2		2
IBM	2	2	3			5
CRC			2	2		
ATKINS ON-LINE				9		2
CDC		2		3		
I.P.SHARP						
TYMSHARE			2			
OTHER			2	5		3
COMPUTEL					2	
SCICON					2	
BOC		2				
BARIC						2

EXHIBIT IV-12

ACTIVITY: INDUSTRIAL

GROUP: TIMES 51-200

INPUT

Interactive Timesharing

- This is a strong market, contested by HIS, COMSHARE, IBM and Atkins On-line, with established competition from ADP and CRC. These companies do not all compete for the same market, in terms of applicational requirements however, such that a direct comparison would be misleading.

- Isolated contracts with a small number of users are also found with Baric, Computel and Scicon.

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IV-3 INDUSTRIAL COMPANIES TIMES 201-500

- Response in this group was very high (almost half of the entire population) and, as a result, the data provides an excellent insight into the group EDP usage.

- Four major groups required mini mail shots :
  - Norcos
  - Morgan Crucible Company
  - Lavid Group
  - Raybeck

In-HOuse Hardware Usage

- Only 9% of this group had no hardware, a substantial drop on the Times Top 200. The actual number of companies this represents remains relatively unchanged. No particular significance need be attached to this.

- The shift to single system sites is now noticeable with a massive 47% using the single processor, more than double the number in group II (see Exhibit IV-13).

- Terminal usage has dropped in this group with more than half the sites not using any. As could be expected the extra large clusters (more than twenty terminals) diminish to only 17%.

- The installed computer market share in this group is as follows :

VENDOR	% having at least one system from the vendor	% market share Times 201-500 by number
IBM	37	32
ICL	29	26
DEC	8	7
BURROUGHS	7	5
NCR	7	5
HIS	6	5
UNIVAC	4	4
Others	19	16

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURE (PRINCIPAL)

TOTAL SAMPLE: 141 RESPONSES (47%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	BURROUGHS	NCR	DEC	OTHER
QUANTITY	NONE	9	24	7	11	18	2	2	4	4	1	10
	≤5		14	6	2	8	3	1	1	1		4
	>5 ≤10		1	3	2	2					1	1
	>10 ≤20		4	4	1	4	1		1	1	3	1
	>20		4	3	5	5		1	1	1	3	3
SUPPLIER	IBM		15	6	3	16						
	HIS		1	1			3					
	ICL		6	6	4							
	BURROUGHS		1	1					1			
	DEC		1	2	1	1					3	
	OLIVETTI				2							
	DATAPOINT		1	1	1		1	1				1
	ITT		1	1	1	1						
	UNIVAC		1					1				1
	HARRIS			1		1						
	DIABLO				1	1						
	INCOTERM		1		1							
	OTHER		3	2	7	2		1	1		1	5

EXHIBIT IV-13

ACTIVITY: INDUSTRIAL

GROUP: TIMES 201-500

- In this small to medium sized system market, IBM has scored heavily with a strong lead on ICL. More surprising, however, is the significant strength of DEC with more installed systems than any of the three other major suppliers HIS, Burroughs and Univac.

- Alternate vendor supply of terminals is negligeable to this section of the market with minor penetration of Olivetti, Datapoint, ITT, Harris, Incoterm and Diablo.

Trends in Computer Services Expenditures

- The size of the average Computer Services user budget is substantial with a distinct bias towards the £25K per annum and over.

- Of those that use Computer Services, over one third are planning to increase their Batch Services and Remote Batch Services expenditure. Interactive Timesharing is far more popular than either of the former (see Exhibit IV-14).

- There are, however, a significant proportion of Batch Services users that are planning to decrease their usage, usually by a large amount.

- Rubery Owens Holdings, a major user of IBM and Geest, plans to scrap all outside services. Adams Foods, a Compower user, is also planning to drop its Batch services. Williams Hudson Group, a Hoskyns account will abandon their use, as will Barratt Developments a user of Computerpower (NCB).

- Growth rates for Batch average out around 10% ; for Remote Batch it is in the 20% range while Interactive Timesharing averages 30%.

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TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

TOTAL SAMPLE: 141 (47%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K <5K	≥ 5K <12K	≥ 12K <25K	≥25K	TOTAL
BATCH	Growth	4	8	4	9	13	38
	Decline		3	3	1	8	15
REMOTE BATCH	Growth	3	4	5	3	15	30
	Decline		1	1	1	4	7
INTER-ACTIVE	Growth	3	5	10	9	15	42
	Decline		3	4	1	4	12

EXHIBIT IV-14

ACTIVITY: INDUSTRIAL

GROUP: TIMES 201-500

- Interactive Timesharing has a high number of small and large users planning to double their usage. Readicut International, Hickson and Welch, William Jackson & Co., Humphreys and Glasgow, Coral Leisure Group - all plan 100% increases.

- Overall, this group is well penetrated by Computer Services, with nearly 55% using one category or another.

Application Usage and Trends

- As with all sectors examined, the General Accounting and Payroll category proved the most popular of all those in use at present. And, as with all sectors, it is not the fastest growing application area (see Exhibit IV-15).

- In this sector of industry, Financial Analysis and Planning is expected to grow the fastest by users followed by Product/ Inventory control.

- Marketing/Sales, while quite popular now, is not expected to grow very fast, while Engineering/Scientific applications are the least popular in terms of both usage and planned growth.

Batch Services Usage

- There is an enormous diversity of suppliers in Batch Services to this sector. COMPOWER, CENTREFILE,BARIC AND BOC are the most popular, with the latter particularly so.

- Sole source supply is quite frequent but no single vendor can claim a clear ascendency in this sector of the UK market.

Remote Batch Usage

- This is the least popular of all categories of services in this group, but the clear leader is IBM over Centrefile, COMPOWER, SCICON and SIA.

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TOTAL SAMPLE: 141 RESPONSES (47%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	26		24
B	70		64
C	72		56
D	45		51
E	91		60
F	60		70
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-15

LEGEND

A=Engineering/Scientific
B=Production/Inventory
C=Marketing/Sales
D= Personnel
E= General Acctg/Payroll
F= Financial Analysis/ Planning
G= N/A
H= N/A
J= N/A

ACTIVITY: INDUSTRIAL

GROUP: TIMES 201-500

- Penetration by this category of service is low given the size of the market and the success of other modes of service.

Interactive Timesharing Usage

- The strongest market for services in this sector, Timesharing is a strongly developing market as well. The leading supplier is Honeywell, followed by IBM and COMSHARE, in that order.

- ADP-NIS and Atkins On-line are the only two major secondary suppliers, while CDC and Tymshare are clearly not in running in this sector.

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BATCH SERVICES USED BY

SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 141 RESPONSES (47%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% <10%	≥10 <25%	≥25 <50%	≥ 50%
B O C	3					2
BARIC		1	1		1	1
CDC	1					
CMG	1					
ADP – MD				1		1
GEEST			1			
COMPUTEL				1	1	
COMPOWER	1		1	1		1
IBM					1	1
OTHER	7	1	1	4	1	8
CENTREFILE	1		1	1		

EXHIBIT IV-16

ACTIVITY: INDUSTRIAL

GROUP: TIMES 201-500

REMOTE BATCH SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 141 RESPONSES (47%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5%<10%	≥10%<25%	≥25 <50%	≥ 50%
CENTREFILE	1	1		1		
UCC				1		
SIA			1	1		
UCSL					1	
IBM	1	1		1		1
COMPOWER				1	1	
COMPUTEL						
SCICON		1				1
CDC		1		1		
LOWNDES-AJAX						
OTHER		1		2	1	3

EXHIBIT IV-17

ACTIVITY: INDUSTRIAL

GROUP: TIMES 201-500

INTERACTIVE SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 141 RESPONSES (47%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% < 10%	≥ 10 < 25%	≥ 25 < 50%	≥ 50%
HIS	3	2	1	1	3	1
COMSHARE	2	1	1	1	1	2
ADP–NIS	1	1		2	1	
IBM	4	1	1	1		1
CRC						
ATKINS ON-LINE			1			1
CDC				1		1
I.P.SHARP						
TYMSHARE					1	
OTHER		1		1	1	2

EXHIBIT IV-18

ACTIVITY: INDUSTRIAL

GROUP: TIMES 201-500

IV-4 INDUSTRIAL COMPANIES - TIMES 501-1000

• At the time of writing, with responses still coming in at 10 a day, the response rate for this group was 33%, above the quota set, but below all other Times 1000 groups. This is entirely due to the timing of the survey interviews and mailing.

• Six main company groups were addressed by "mini mail shots". These were :

- Senior Engineering Group
- Pentos
- Adwest Group
- Consolidated Pneumatic Tool
- Crest Nicholson
- Bullough

In-House Hardware Usage

• The percentage of non-users begins to grow in this group as the company size decreases. The number of companies who make no use of hardware or services is very small however, (1% of the whole sample) the most notable being J.E. Sanger Ltd.

• Single system sites are the norm with 60% in this category (see Exhibit IV-19). Only 34% of the whole sample have terminals.

• The market share of the main suppliers is as follows :

VENDOR	% having at least one system from the vendor	% market share Times 501-1000 by number
IBM	25	26
ICL	22	24
HIS	10	10
BURROUGHS	8	7
NCR	7	7
DEC	6	7
Other	16	14

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER (PRINCIPAL)

TOTAL SAMPLE: 191 RESPONSES (33%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	ICL	BURROUGHS	NCR	DEC	OTHER
QUANTITY	NONE	19	36	7	5	11	5	15	5	4	2	12
	≤5		13	5		7	3	5	1		2	2
	>5 ≤10		4	2	1	2	1	1	1	1	1	1
	>10 ≤20		4		1	3			1			1
	>20		3	1		2	1	1		1	1	
SUPPLIER	IBM		8	2		9						
	HIS		2	1			2					
	ICL		5	1				6				
	BURROUGHS		1	1	1				2			
	NCR		1	1						1		
	DEC		3	2		1	1				4	1
	INCOTERM		1				1					
	DATA 100		1			1						
	VIATRON		1				1					
	OLIVETTI		1			1						
	ITT		1	1		2	1					
	HARRIS				1	1						
	OTHER		6	3		2	1	1		1	1	2

EXHIBIT IV-19

ACTIVITY: INDUSTRIAL

GROUP: TIMES 501-1 000

- Throughout the whole of Times Top 1000, IBM and ICL have shared more than half of the installed base by number. In the 501-1000 group this share decreases.

- On the other hand, Honeywell, whose share of the other groups vacillates between 5 and 8%, has a stronger penetration of this group : - 10%. Univac's share is so small (4%) as to be classified in "others".

- IBM remains the main target of the compatible terminal vendors ITT, Incoterm, Harris, Data 100 and others, (Centrovics in particular). However, the largest installation on record in the group is Fodens with 39 IBM terminals on an IBM 370/148.

Trends in Computer Services Expenditures

- Just over 47% of the sample makes use of Computer Services of one category or another, with a heavy preponderance for Batch Services. This does not mean that Batch is popular, however, with a decline in usage forecast by 14% of the survey respondents (see Exhibit IV-20).

- Forecasted increases in Batch usage are substantial but the size of the increase (15%) is, on average, much lower than the size of the average decrease (75%). Sharp increases of 100% are forecast by Boustead and Office Cleaning Services while Habitat Design Holdings, Seddon & Atkinson, Saatchi & Saatchi Garland Compton and Travis & Arnold Ltd, all expect to drop their existing usage of Batch Services.

- The use of Remote Batch Services is very small indeed but growth expectations exceed declines by twelve to one. The volume of business transacted is also small.

- Interactive services are a very strong growth market (the strongest in the group), with average increases of 21%.

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TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

Note : includes users only

TOTAL SAMPLE: 191 RESPONSES (33%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K <5K	≥ 5K <12K	≥ 12K <25K	>25K	TOTAL
BATCH	Growth	2	6	10	1	6	24
	Decline		7	3	4		14
REMOTE BATCH	Growth			2	3	7	12
	Decline		1				1
INTER-ACTIVE	Growth	1	7	10	6	6	29
	Decline		1	2		1	4

EXHIBIT IV-20

ACTIVITY: INDUSTRIAL

GROUP: TIMES 501-1000

INPU

Applications Usage and Trends

- The highest usage area is again General Accounting and Payroll and Financial Analysis/Planning is the strongest growth area followed closely by the Production/Inventory category. This is the pattern for the entire Times Top 1000 companies.

- In the same vein, the least attractive is the Engineering/ Scientific category.

Batch Services Usage

- Baric emerges as the strongest Batch Services supplier in this category, although there is a multitude of small to medium vendors. ADP, through Management Dynamics figures preminently.

- Centrefile is modestly present in company with Lowndes Ajax, CMG and BOC. IBM has virtually disappeared.

Remote Batch Services Usage

- Centrefile is again dominant in this category, followed by Lowndes Ajax, UCSL and Compower.

- All other vendors in this category, including IBM, are marginal suppliers.

Interactive Timesharing

- The second largest market in this group, Timesharing is clearly dominated by Comshare, HIS and IBM, in that order. The percentages are small, however, which is an indication of the lack of penetration of the Timesharing in the Times 501-1000 group.

- ADP-NIS and CDC largely dominate the second tier of suppliers, which includes SCICON, Systemshare, DSI, CRC and Atkins On-line.

- While the number of users is small, the size of the expenditure for each is frequently high.

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INPUT

APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 191 RESPONSES (33%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	17		17
B	59		64
C	58		52
D	26		39
E	85		58
F	43		65
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-21

LEGEND

A= Engineering/Scientific
B= Production/Inventory
C= Marketing/Sales
D= Personnel
E= General Acctg/Payroll
F= Financial Analysis and Planning
G= N/A
H= N/A
J= N/A

ACTIVITY: INDUSTRIAL

GROUP: TIMES 501-1000

BATCH SERVICES USED BY

SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 191 RESPONSES (33%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% <10%	≥10 <25%	≥25 <50%	≥ 50%
B O C	1				1	1
BARIC	3		1	1	1	2
CDC	1			1		
CMG	1					1
ADP – MD	2			1		
GEEST	1					
COMPUTEL						
COMPOWER	1			1		
IBM	1					
OTHER	7		2	2	5	7
LOWNDES AJAX	1		1			1
CENTREFILE	1	1				2
DSI	1					
GORDON & GOTCH				1	1	1

EXHIBIT IV-22

ACTIVITY: INDUSTRIAL

GROUP: TIMES 501-1000

REMOTE BATCH SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 191 RESPONSES (33%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5%<10%	≥10%<25%	≥25 <50%	≥ 50%
CENTREFILE	2				1	1
UCC						
SIA						
UCSL						1
IBM						
COMPOWER						1
COMPUTEL						
SCICON						
CDC					1	
LOWNDES-AJAX	1					
OTHER				1	1	1

EXHIBIT IV-23

ACTIVITY: INDUSTRIAL

GROUP: TIMES 501-1000

INPU

INTERACTIVE SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 191 RESPONSES (33%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% < 10%	≥ 10 < 25%	≥ 25 < 50%	≥ 50%
HIS	1	1		2	1	1
COMSHARE	3			1	1	1
ADP–NIS	1				1	1
IBM	2			1		
CRC			1			
ATKINS ON-LINE				1		
CDC		1			1	1
I.P.SHARP						
TYMSHARE						
OTHER	3			1	1	1

EXHIBIT IV-24

ACTIVITY: INDUSTRIAL

GROUP: TIMES 501-1000

INPUT

IV-5 IRISH INDUSTRIAL COMPANIES

- There were insuperable problems with the IRISH Top 20 due to the telephone maintenance and mail strike. Even after the partial qualification phase, the speed of response was very slow. Nevertheless, the minimum quota was achieved.

- The number of respondents (6) makes a statistical analysis meaningless on most subjects other than on the in-house use of computers.

- ICL has 100% of the user sample (83% of the total sample) and all are small to medium-sized computers. Datapoint has one significant installation with IRISH SUGAR. AIM terminals are naturally found on the ICL 190IT at Automatic Information Management Ltd.

- Respondents use of Remote Batch and Interactive Timesharing is non-existent. In Batch services CARA and Management Computer Services divide the revenue from Mc Inerney Properties 80/20. Growth in the account is expected to be 10%.

- Applications usage centre on the Marketing/Sales and General Accounting/Payroll categories. Growth is strongest in Production/Inventory services however, with Personnel and General Accounting/Payroll levelling off.

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APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 6 RESPONSES (30%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	-	-	33
B	50	-	83
C	83	16	66
D	50	16	50
E	83	-	50
F	50	-	66
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-25

LEGEND

A=Engineering/Scientific
B=Production/Inventory
C=Marketing/Sales
D= Personnel
E=General Acctg/Payroll
F=Financial Analysis/ Planning
G= N/A
H= N/A
J= N/A

ACTIVITY: INDUSTRIAL

GROUP: IRISH TOP 20

IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER

(PRINCIPAL)

TOTAL SAMPLE: 6 RESPONSES (30%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	BURROUGHS	NCR	ICL	OTHER
QUANTITY	NONE	17	49								49	
	≤5											
	>5 ≤10		17								17	
	>10 ≤20			17							17	
	>20											
SUPPLIER	DATAPOINT			17							17	
	AIM		17								17	

EXHIBIT IV-26

ACTIVITY: INDUSTRIAL

GROUP: IRISH TOP 20

IV - 6 CLEARING BANKS, FINANCE HOUSES, DISCOUNT HOUSES, BUILDING SOCIETIES

IV-6. Clearing Banks, Finance Houses, Discount Houses and Building Societies

- The response rate to the survey from this section of the economy was extremely good (47%) as was the quality of the data received.

- The only reservation that must be considered is that a number of respondents insisted on a telephone interview and some (6%) of these professed to use neither in-house EDP equipment nor external services. All of these were in the Finance Houses and Discount Houses categories.

- Assuming that this data is accurate, then 42% of the entire group are none users of in-house hardware.

In-House Hardware Usage

- There are very few multiple system sites (6%) and a low proportion of two system sites (17%). The entire group is highly underpenetrated by EDP equipment.

- Only 27% have terminals but 10% are very large sites. All of these are Building Societies : Halifax, Leeds Permanent and Britannia, the two largest being clients of IBM.

- The market shares of the major suppliers are as follows :

VENDOR	% having at least one system from the vendor	% market share by number
ICL	18	25
IBM	17	25
NCR	11	16
HIS	6	9
DEC	4	6
UNIVAC	2	3
Others	16	16

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER (PRINCIPAL)

TOTAL SAMPLE: 46 RESPONSES (47%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	ICL	NCR	DEC	OTHER
QUANTITY	NONE	42	22	9		11	2		9	7	2	9
	≤5		9	2		2	2		2	2	2	
	>5 ≤10											
	>10 ≤20			2	4		2			2		7
	>20		4	4	2	4		2	7			
SUPPLIER	ICL		2	4					7			
	IBM		2	4		7						
	UNIVAC				2			2				
	HIS		2	2			4					
	NCR		2		2					4		
	DEC		2								2	
	LOGABAX				2				2			
	Other			4	7		2		2			7

EXHIBIT IV-27

ACTIVITY: FINANCIAL

GROUP: Clearing Banks, Finance Houses, Discount Houses & Building Societies

INPU

- NCR has a surprisingly high market share, ahead of the more prominent Burroughs and Univac. Univac's systems tend to be single, large systems with the exception of the 90/30. Finding them is therefore more difficult. The Burroughs and Univac scores are nevertheless remarkably low.

- ITT and the other compatible terminal vendors are largely absent from this group with Logabax the only major supplier.

- DEC's modest tally is significant in that DEC is present in all groups (even though the current market share is low).

Trend in Computer Services Expenditures

- Of those that are users of Computer Services (41%), a meager 16% plan expansion of their usage of Batch Services (see Exhibit IV-26), Centrefile absorbs nearly all of this business to the exclusion of all of the major suppliers (BOC, BARIC, CMG, COMPUTEL, COMPOWER etc).

- Remote Batch usage is surprisingly strong (see Exhibit IV-29) with 47% of the Computer Services user sample expecting to increase their usage by an average of 16.7%. There are few planning a decrease in usage. Centrefile's hold on this business is even stronger than on the Batch Services market. Only Lowndes Ajax and CDC have succeeded, in a limited fashion, in providing an alternative to Centrefile in the Remote Batch market in this group (see Exhibit-30).

- The Interactive Market is small and little interest in expansion was shown by survey respondents. Even here Centrefile is present although at one site only.

Application Usage and Trends

- There is little to report here. By far the strongest application group in use is General Accounting and Payroll followed by Financial Analysis and Planning.

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TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

Note : include users only

TOTAL SAMPLE: 46 RESPONSES (47%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K < 5K	≥ 5K < 12K	≥ 12K < 25K	≥ 25K	TOTAL
BATCH	Growth	5				11	16
	Decline						
REMOTE BATCH	Growth				5	42	47
	Decline				5		5
INTER-ACTIVE	Growth				5	5	10
	Decline					5	5

EXHIBIT IV-28

ACTIVITY: FINANCIAL

GROUP: Clearing Banks, Discount Houses, Building

- The roles are reversed in planned expansion, with Financial Analysis and Planning marginally favoured over General Accounting and Payroll.

- International Financial Dealing as an EDP application holds little interest for the group.

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APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 46 RESPONSES (47%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	76		48
B	50		50
C	17		26
D	4		4
E	N/A	N/A	N/A
F	N/A	N/A	N/A
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-29

LEGEND

A=General Acctg/Payroll
B=Financial Analysis/ Planning
C=Portfolio Management
D=International Financial Dealing
E= N/A
F= N/A
G= N/A
H= N/A
J= N/A

ACTIVITY: FINANCIAL

GROUP: Clearing Banks, Finance Houses, Discount Houses Building Societies

BATCH SERVICES USED BY

SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 46 RESPONSES (47%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% <10%	≥10 <25%	≥25 <50%	≥ 50%
B O C						
BARIC						
CDC						
CMG						
ADP – MD						
GEEST						
COMPUTEL						
COMPOWER						
IBM						
OTHER						
CENTREFILE	9					

EXHIBIT IV-30

ACTIVITY: FINANCIAL

GROUP: Clearing Banks, Finance Houses, Discount Houses and Building Societies

INPU

REMOTE BATCH SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 46 RESPONSES (47%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5%<10%	≥10%<25%	≥25 <50%	≥ 50%
CENTREFILE	20					2
UCC						
SIA						
UCSL						
IBM						
COMPOWER						
COMPUTEL						
SCICON						
CDC						2
LOWNDES-AJAX		2				
OTHER						2

EXHIBIT IV-31

ACTIVITY: FINANCIAL

GROUP: Clearing Banks, Finance Houses, Discount Houses and Building Societies

INPU

INTERACTIVE SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 46 RESPONSES (47%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		<5%	≥5% <10%	≥10 <25%	≥25 <50%	≥ 50%
HIS	2					
COMSHARE						
ADP–NIS						
IBM	2					
CRC						
ATKINS ON-LINE						
CDC	2					
I.P.SHARP						
TYMSHARE						
OTHER CENTREFILE	2					

EXHIBIT IV-32

ACTIVITY: FINANCIAL

GROUP: Clearing Banks, Finance Houses, Discount Houses and Building Societies

INPUT

IV-7 BRITISH BANKS TRADING MAINLY OVERSEAS, FOREIGN BANKS IN BRITAIN

- The responses from Foreign Banks were extremely good and more than adequate as a sample. The British Banks trading Overseas did not respond well, however, and provide an insufficient sample. The data below must be read with this fact in mind.

- Non-users of in-house systems are the majority in this group but large systems and multiple vendor sites are not common. The smaller systems predominate.

In-House Hardware Usage

- The typical system used by this group is a single keyboard IBM small business processor with one or two terminals. Other vendors do not have substantial penetration with the minor exception of NCR.

- In this group the vendor market shares are as follows :

VENDOR	% having at least one system from the vendor	% market share by number
IBM	28	45
NCR	10	15
BURROUGHS	9	13
HIS	5	8
ICL	3	5
DEC	2	3
Others	8	11

- The very high success of IBM (see Exhibit IV-33) is contrasted by ICL's dismal performance. NCR, already moderately present in other groups (e.g. Times Top 50 - 6%, Times 201-500 - 5%) obtains its second highest score of all groups with 15%. Burroughs is equally prominent and does as well in this group (13%) as in Group 8, (Accepting Houses, Mining Finance and other Finance).

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER

(PRINCIPAL)

TOTAL SAMPLE: 66 RESPONSES (34%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	BURROUGHS	NCR	DEC	OTHER
QUANTITY	NONE	47	20	12	5	18	3		5	8	2	5
	≤5		3	2	3	5				2		3
	>5 ≤10		3	2		2	2		2			
	>10 ≤20											
	>20				3	3			2			
SUPPLIER	IBM		5		5	6						
	BURROUGHS			2					2			
	HARRIS				2	2						
	NCR				2					2		
	DATAPOINT			2	2	2						2
	HASELTINE		2				2					
	LOGABAX		2				2					
	INCOTERM								2			

EXHIBIT IV-33

ACTIVITY: FINANCIAL

GROUP: Foreign Banks, British Banks Overseas

INPU

- Very few sites have alternate-vendor terminals, with rare exceptions of Datapoint, Harris, Hazeltine and Incoterm.

Trends in Computer Services Expenditures

- Computer Services penetration in this group is very small and patchy, so that a clear picture of usage does not emerge.

- Growth candidates outstrip the number of declines in usage that are expected in all three Computer Services categories.

- Batch Services growth ranges from nil to 10 per cent with the single exception of Schelsinger Ltd, a Coutts client who intends to double its expenditure.

- Remote Batch Services growth ranges grom 10 to 25%. First National Bank of Chicago intends to halve its expenditure with On-line, however, the only decline in usage found.

- Interactive Timesharing services shows the strongest growth both in number of clients and size of the increase ; the range is from 5 to 100%. Declines are, however, also sizeable, where they exist : in particular in Mellon Bank and Sanwa Bank Ltd, (the former and ADP client, the latter an IBM client).

Applications Usage

- Only 52% of the Foreign Banks carry out their General Accounting and Payroll applications via EDP methods and most of those that do , see present usage as adequate and foresee no change.

- Use of EDP Financial Analysis/Planning and International Financial Dealing is confined to roughly one third of the population while Portfolio Management is restricted to less than one in five,

- Overall this group of companies offers sizeable potential for EDP services, provided that the right level of contact is established.

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APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 66 RESPONSES (34%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	52		23
B	29	2	29
C	17	2	20
D	36	2	27
E	N/A	N/A	N/A
F	N/A	N/A	N/A
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-34

LEGEND

A=General Acctg/Payroll
B=Financial Analysis/Plg
C=Portfolio Management
D=International Financial Dealing
E= N/A
F= N/A
G= N/A
H= N/A
J= N/A

ACTIVITY: FINANCIAL

GROUP: Foreign Banks, British Banks Overseas

TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

Note : includes users only

TOTAL SAMPLE: 66 RESPONSES (34%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K <5K	≥ 5K <12K	≥ 12K <25K	>25K	TOTAL
BATCH	Growth			7	7		14
	Decline					7	7
REMOTE BATCH	Growth	7		7		13	27
	Decline					7	7
INTER-ACTIVE	Growth	7		7	13	13	40
	Decline			20		7	27

EXHIBIT IV-35

ACTIVITY: FINANCIAL

GROUP: Foreign Banks, British Banks Overseas

INPUT

IV-8 ACCEPTING HOUSES, OTHER FINANCIAL INSTITUTIONS, MINING FINANCE

IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER

(PRINCIPAL)

TOTAL SAMPLE: 14 RESPONSES (35%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	ICL	BURROUGHS	NCR	DEC	OTHER
QUANTITY	NONE	58	7	14				7	7	7		
	≤5											
	>5 ≤10											
	>10 ≤20				7						7	
	>20		7		7	7	7				7	
SUPPLIER	DEC				7						7	
	IBM		7			7						
	DATA 100		7			7						
	LYNWOOD				7		7					
	PHILIPS		7			7						

EXHIBIT IV-36

ACTIVITY: FINANCIAL

GROUP: Accepting Houses, Other Finance, Mining Finance

TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

Note : include users only

TOTAL SAMPLE: 14 RESPONSES (34%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K < 5K	≥ 5K < 12K	≥ 12K < 25K	> 25K	TOTAL
BATCH	Growth		17			33	50
	Decline						
REMOTE BATCH	Growth						
	Decline					17	17
INTER-ACTIVE	Growth					17	17
	Decline						

EXHIBIT IV- 37

ACTIVITY: FINANCIAL

GROUP: Accepting Houses, Other Finance, Mining Finance

INPU

• The overall response rate to this group was, at the time of analysis 35%, an adequate response. The distribution of this response between the three company types was not satisfactory, however, with the Accepting Houses and Mining Finance companies not responding well.

• With this proviso, the group as a whole showed a decided lack of penetration by EDP methods, with 58% of non-users of systems, 43% of which do not use services either.

In-House Hardware Usage

• With so few users of in-house hardware, percentages begin to deceive, based as they are on one or two responses in the matrix cell. Thus in Exhibit IV-36, for 7% read one response for 14%, two etc.

• The percentages given for the market share refer as usual to the entire sample and not to shares of the installed sample (see Exhibit II-10). It would not be meaningful to list them since they are based on so small an installed base.

• It is significant that, with so few systems in use, two should be DEC systems (with DEC terminals).

Trend in Computer Services Expenditures

• The majority of Computer Services users in this group make use of Batch Services, all of whom expect to increase their expenditures within the same category. Very little use is made of Remote Batch or Interactive services.

• The vendors serving this company group usually have a single contract with one exception : Lowndes Ajax with 2 single source clients.

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- Only half of the population makes use of EDP for General Accounting and Payroll, one third for Financial Analysis/Planning and Portfolio Management and only one in five for International Financial Dealing.

- This entire company group is highly underpenetrated and offers business potential to vendors of all Computer Services categories.

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APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 14 RESPONSES (35%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	50		29
B	36		36
C	29		36
D	21		21
E	N/A	N/A	N/A
F	N/A	N/A	N/A
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-38

LEGEND

A=General Acctg/Payroll
B=Financial Analysis/Plg
C=Portfolio Mgt
D=International Financial Dealing
E= N/A
F= N/A
G= N/A
H= N/A
J= N/A

ACTIVITY: FINANCIAL

GROUP: Accepting Houses, Other Finance, Mining Finance

IV-9 UNIT TRUSTS, PROPERTY COMPANIES, INVESTMENT TRUSTS

- Responses from this group were adequate for analysis with the exception of the Unit Trusts, four only of which replied to the survey. Two of these make no use of either in-house EDP systems or external Computer Service bureaux.

- This is true of 81% of the entire sample such that an analysis of users would not be statistically correct, since in in-house hardware usage it covers only seven systems and in Computer Services usage only ten users.

- The larger systems both belong to IBM (a 370/138 and 370/135) and both of these users make use of external bureaux as well, mainly IBM, (see Exhibit IV-39).

- The larger Computer Services users (greater than £25,000 per annum) are nearly all Batch Services users and are all sole source bureaux users. Two of these are Extel clients. The largest Timesharing client belongs to HIS.

- The Bank of Scotland appears twice as a source of Batch and Remote Batch Services to Investment Trusts.

- Overall, the trend in services usage is towards growth in all three categories, (see Exhibit IV-40).

- As a result of the low usage of EDP systems, the EDP applications usage was low. Less than one third of the sample uses EDP-based General Accounting and Payroll and even less use is made of Portfolio Management, Financial Analysis/Planning and a tiny proportion use International Financial Dealing, (see Exhibit IV-41).

- While difficult to target, (there are only 19 managers of the 75 Trusts and Funds listed in the Times 1000), there is no doubt that this company group offers high potential to Computer Services vendors, particularly those who have managed to obtain one or more solid accounts that can be used as references for approaching other, similar prospects.

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER (PRINCIPAL)

TOTAL SAMPLE: 32 RESPONSES (36%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	BURROUGHS	NCR	DEC	OTHER
QUANTITY	NONE	81	13	6		6	3				3	9
	≤5											
	>5 ≤20											
	>10 ≤20											
	>20											
SUPPLIER												

EXHIBIT IV-39

ACTIVITY: FINANCIAL

GROUP: Unit Trust, Property Companies and Investment Trusts

INPUT

TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

Note : includes users only

TOTAL SAMPLE: 32 RESPONSES (36%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K <5K	≥ 5K <12K	≥ 12K <25K	>25K	TOTAL
BATCH	Growth			13		16	29
	Decline						
REMOTE BATCH	Growth			13			13
	Decline						
INTER-ACTIVE	Growth		13	13			26
	Decline		13				13

EXHIBIT IV-40

ACTIVITY: FINANCIAL

GROUP: Unit Trust, Property Companies & Investment Trusts

INPUT

IV-10 INSURANCE COMPANIES (LIFE AND NON-LIFE)

TOTAL SAMPLE: 32 RESPONSES (36%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	28		9
B	16		13
C	25		9
D	6		6
E	N/A	N/A	N/A
F	N/A	N/A	N/A
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-41

LEGEND

A=General Acctg/Payroll
B=Financial Analysis /Plg
C=Portfolio Mgt
D=International Financial Dealing
E= N/A
F= N/A
G= N/A
H= N/A
J= N/A

ACTIVITY: FINANCIAL

GROUP: Unit Trust, Property Companies & Investment Trusts

INPUT

- The response rate for this group of companies was high (48%) and the data of good quality.

- While there is the usual 17% of non users of hardware, there is no single instance of non users of EDP : These same 17% of non users of hardware all use Computer Services, (as do 54% of the entire sample).

- Most sites have medium-sized to large systems (IBM 370/145, ICL 1903A etc) with a tendency towards small numbers of high powered processors. The expenditures on Computer Services follow this pattern with a very high proportion of users spending more than £25,000 per annum.

In-House Hardware Usage

- In this sector of business IBM rules with easily the highest percentage of installed sites. Large manufacturers like Univac and DEC were completely absent from the (large) sample.(see Exhibit IV-42).
- The actual market shares are as follows :

VENDOR	% having at least one system from the vendor	% market share by number
IBM	42	34
ICL	29	24
HIS	17	14
NCR	4	3
BURROUGHS	4	3
Others	25	22

- Burroughs and Honeywell sites use Burroughs and Honeywell terminals, respectively, but ITT has penetrated at least one IBM/ICL site (Norwich Union) and Harris terminals provide the on-line input to both Itel and IBM processors at the Guardian Royal Exchange.

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER

(PRINCIPAL)

TOTAL SAMPLE: 24 RESPONSES (48%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	BURROUGHS	NCR	ICL	OTHER
QUANTITY	NONE	17	26		9	17				4	17	4
	≤5			13		4	4				4	4
	>5 ≤10											
	>10 ≤20				9	4	4				4	4
	>20		4	13	9	17	9		4		4	13
SUPPLIER	IBM		4	9	4	17						
	ICL			4	4						9	
	HIS			4			4					
	Raytheon Cossor				4							4
	Harris			4		4						4
	ITT				4	4						
	Burroughs				4				4			
	Other			4	9							13

EXHIBIT IV-42

ACTIVITY: INSURANCE COMPANIES (Life and Non-life)

GROUP: ALL

- There are some very large in-house networks of terminals in the Insurance sector. At the Friends Provident Life, for example, there are 100 3270 VDUs on-line to IBM/HIS processors and Commercial Union has 90 Raytheon Cossor terminals on IBM/ICL processors.

- MIxed vendor sites are very common in terms of both processors (39%) and terminals (22%).

Trend in Computer Services Expenditures

- The proportion of respondents using Computer Services of one category or another (54%), had some disturbing things to say about their intentions on future expenditures. A very strong proportion expect to spend less on Computer Services in future (see Exhibit IV-43).

- Of the total sample, Batch is used by 38% of respondents, Remote Batch by 17% and Timesharing Services by 33%.

- Foremost among the declines are Timesharing Services with as many (31%) of users planning decreases as those planning increases in Timesharing expenditure. Commercial Union, Friends Provident and General Accident all expect massive decreases of 75-100%.

- The same remark applies to Remote Batch Services, with the difference that the decline percentage is lower (23%).

- The only strong services area, in terms of usage and growth is Batch. Phoenix Assurance, General Accident, Scottish Amicable and Royal London Mutual all plan increases. Only Refuge Assurance plans a substantial decrease in usage.

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TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

Note : percentages referto users only

TOTAL SAMPLE: 24 RESPONSES (48%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K <5K	≥ 5K <12K	≥ 12K <25K	>25K	TOTAL
BATCH	Growth					31	31
	Decline					15	15
REMOTE BATCH	Growth					23	23
	Decline				8	15	23
INTER-ACTIVE	Growth					31	31
	Decline	8				23	31

EXHIBIT IV-.43

ACTIVITY: INSURANCE COMPANIES (Life_ and Non-life)

GROUP: ALL

INPUT

Applications Usage and Trends

- Foremost among the application categories in use was General Accounting and Payroll, but surprisingly it was also expected to be the strongest growth area in Insurance.

- Financial Analysis and Planning for once takes second place in growth and even has one user (Friends Provident Life Office) planning to make less use of it.

- Portfolio Management and International Financial Dealings received substantially less votes for both usage and planned increases, although no decreases are planned, (see Exhibit IV-44).

Computer Services Usage

- IBM is the prime supplier of Batch Services to the Insurance sector (see Exhibit IV-45), followed by Baric, CDC and CMG.

- Lowndes Ajax, Eurocom, Extel/IAS and CCS are all present also in substantial ways. Lowndes Ajax absorbs all of the Hill Samuel Life business, and Eurocom is the sole supplier of Royal London Mutual.

- In Remote Batch, (see Exhibit IV-46) only isolated contracts appear for Centrefile (General Accident Fire & Life) Lowndes Ajax (Hill Samuel) and UCC (Economic Insurance). Statistical inference is not possible.

- Use of Interactive Timesharing is much stronger (see Exhibit IV-47). The main supplier is IBM once again with a 36% share of the existing usage by number of contracts. Honeywell, Comshare and CDC share their contracts with IBM, CDC and Comshare respectively.

- Overall, the Insurance market is not a strong user of services, Remote Batch in particular, preferring in-house systems to external services.

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INPUT

APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 24 RESPONSES (48%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	79		71
B	50	4	58
C	42		29
D	13		17
E	N/A	N/A	N/A
F	N/A	N/A	N/A
G	N/A	N/A	N/A
H	N/A	N/A	N/A
J	N/A	N/A	N/A

EXHIBIT IV-.44

LEGEND

A=General Acctg/Payroll
B=Financial Analysis/Plg.
C= Portfolio Mgt.
D=International Financial Dealings
E= N/A
F= N/A
G= N/A
H= N/A
J= N/A

ACTIVITY: INSURANCE COMPANIES (Life and Non-life)

GROUP: ALL

BATCH SERVICES USED BY

SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 24 RESPONSES (48%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% < 10%	≥ 10 < 25%	≥ 25 < 50%	≥ 50%
B O C						
BARIC		8				
CDC	4					
CMG	4					
ADP – MD						
GEEST						
COMPUTEL						
COMPOWER						
IBM	4				4	4
OTHER	8					17

EXHIBIT IV-45

ACTIVITY: INSURANCE COMPANIES (Life and Non-life)

GROUP: ALL

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REMOTE BATCH SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 24 RESPONSES (48%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5%<10%	≥10%<25%	≥ 25 < 50%	≥ 50%
CENTREFILE	4					
UCC	4					
SIA						
UCSL						
IBM						
COMPOWER						
COMPUTEL						
SCICON						
CDC						
LOWNDES-AJAX	4					
OTHER	4					

EXHIBIT IV-46

ACTIVITY: INSURANCE COMPANIES (Life and Non-life)

GROUP: ALL

INPUT

INTERACTIVE SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 24 RESPONSES (48%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		<5%	≥5% <10%	≥10 <25%	≥25 <50%	≥ 50%
HIS					4	
COMSHARE					4	
ADP–NIS						
IBM	13				4	
CRC						
ATKINS ON-LINE						
CDC					4	
I.P.SHARP						
TYMSHARE						
OTHER	13				4	

EXHIBIT IV- 47

ACTIVITY: INSURANCE COMPANIES (Life and Non-life)

GROUP: ALL

IV-11 ACCOUNTING AND MANAGEMENT CONSULTANCY

- Out of the thirty major Accounting and Management Consultancy groups listed, 8 responses were received (27%). This must be considered as a success, given the low level of cooperation that Accounting practices and consultancies were willing to provide. The general reaction from consultants was that they don't like questionnaires and as usual, the Accounting practices were very secretive about everything they do.

- There is a very low proportion of this group who have Computer processing centres of their own and even those that do, have small systems. The external bureaux expenditures are usually high, however, with most exceeding the £12,000 per annum range, (one respondent, Urwick Dynamics spends in excess of £150,000 with Honeywell)

In-House Hardware Usage

- This low use of in-house EDP, (62% non-users), is surprising for accounting firms but understandable for management consultancy groups who tend to use client systems. The latter are also heavily involved in turnkey systems and systems and application software.

- It is obvious from the responses that little attention has been paid by the Management Consultants in filling out the questionnaire so that each questionnaire needs to be read individually (in place of the summaries). Eight responses are not enough to constitute a statistical sample and in any case each company should be treated separately, (even if all 30 had responded).

- IBM and DEC were the only suppliers of hardware found in this group. (see Exhibit IV-48).

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IN-HOUSE HARDWARE USAGE BY QUANTITY & MANUFACTURER

(PRINCIPAL)

TOTAL SAMPLE: 8 RESPONSES (27%)

TERMINAL		MAINFRAME USED										
		QUANTITY				SUPPLIER						
		NONE	ONE	TWO	MORE	IBM	HONEYWELL	UNIVAC	BURROUGHS	NCR	DEC	OTHER
QUANTITY	NONE	61		13							13	
	≤5	13		13		13					13	
	>5 ≤10											
	>10 ≤20											
	>20											
SUPPLIER	DATA 100	13										
	TELETYPE			13							13	

EXHIBIT IV- 48

ACTIVITY: ACCOUNTING AND MANAGEMENT CONSULTANCY

GROUP: ALL

Trends in Computer Services Expenditures

- On the whole, the trend in expenditure patterns is very positive with strong growth in all services categories except interactive timesharing where a significant decline was anticipated by Urwick Dynamics. This was sufficient to create a gloomy picture for the entire category which should not be over-generalised, (see Exhibit IV-49).

Application Usage and Trends

- The small number of responses in the sample provided little information on Taxation, Receivership and Portfolio Management. With one response equal to 13%, the value applied to a given category builds very rapidly.

- Despite this, all categories show substantial growth. Particularly strong in this regard were Internal Accounting, Audit, Consultancy and Financial Analysis and Planning, (see Exhibit IV-50)

Batch and Remote Batch Services Usage

- The wide variety of Batch Services suppliers used combined with the small sample produced a largely meaningless analysis. The general conclusion must be that there is low usage of this type of service within the group, (see Exhibit IV-51).

- The number of small, specific-service companies used, was high (e.g. Douglas Moore Ltd, Quotel, Package Programs, Computer Services Centre, Morgan Grenfell etc) while the larger bureaux were usually only marginally used (BOC in particular).

- Remote Batch Usage was even lower than that of Batch Services, with only one company using COMPUTEL and APCM, (see Exhibit IV-52).

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TREND IN EXPENDITURE BY SERVICE CATEGORY AND % USAGE

TOTAL SAMPLE: 8 RESPONSES (27%)

SERVICE	TREND	ANNUAL EXPENDITURE (£000)					
		< 1K	≥ 1K < 5K	≥ 5K < 12K	≥ 12K < 25K	≥ 25K	TOTAL
BATCH	Growth			13	25	25	63
	Decline		13		13		26
REMOTE BATCH	Growth		13			13	26
	Decline						
INTER-ACTIVE	Growth		13	13	13	13	52
	Decline				13	25	38

EXHIBIT IV- 49

ACTIVITY ACCOUNTING AND MANAGEMENT CONSULTANCY

GROUP: ALL

INPUT

APPLICATION USAGE AND TRENDS

TOTAL SAMPLE: 8 RESPONSES (27%)

CATEGORY	PERCENT USAGE		
	PRESENT	FUTURE	
	ARE USING	WILL USE LESS	WILL USE MORE
A	63	-	38
B	50	13	50
C	13	-	25
D	50	-	50
E	-	-	25
F	-	-	13
G	63	-	63
H	-	-	13
J	63	-	75

EXHIBIT IV-50

LEGEND

A=General Acctg/Payroll
B=Internal Acctg
C=External Acctg
D= Audit
E= Taxation, Tax Flagging
F= Receivership
G=Consultancy Portfolio Mgt
J=Financial Analysis

ACTIVITY:ACCOUNTING AND MANAGEMENT CONSULTANCY & Planning

GROUP: ALL

BATCH SERVICES USED BY

SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 8 RESPONSES (27%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5% <10%	≥10 <25%	≥25 <50%	≥ 50%
B O C		13		13		
BARIC						
CDC						
CMG						
ADP – MD						
GEEST						
COMPUTEL						
COMPOWER						
IBM					13	
OTHER	13	13		38		25
CENTREFILE			13		25	
SCICON				13		

EXHIBIT IV- 51

ACTIVITY: ACCOUNTING AND MANAGEMENT CONSULTANCY

GROUP: ALL

REMOTE BATCH SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 8 RESPONSES (27%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		< 5%	≥ 5%<10%	≥10%<25%	≥25 <50%	≥ 50%
CENTREFILE						
UCC						
SIA						
UCSL						
IBM						
COMPOWER						
COMPUTEL		13				
SCICON						
CDC						
LOWNDES-AJAX						
OTHER(APCM)						13

EXHIBIT IV- 52

ACTIVITY: ACCOUNTING AND MANAGEMENT CONSULTANCY

GROUP: ALL

INPUT

Interactive Timesharing Services

- This category is without a doubt the most popular service of all in the group with 88% of respondents making use of it in one way or another, (see Exhibit IV-53).

- Honeywell is easily the most popular vendor and is the most frequent sole source supplier also. In general, multiple vendors are preferred, with COMSHARE frequently the second source.

- No doubt thanks to its good engineering consultancy contacts and extensive engineering library of services, Atkins On-line is also used quite widely.

Recommendations to Clients

- In this group an additional question was asked of the Management Consultancies :

"Do you recommend external bureaux, minicomputers or other EDP methods to your clients ?"

- The result was that there is no discrimination or bias in any of the consultants. They uniformly responded that they recommend all forms of EDP processing, both in-house and external bureaux, according to the clients' needs.

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INTERACTIVE SERVICES USAGE

BY SUPPLIER AND PERCENTAGE

TOTAL SAMPLE 8 RESPONSES (27%)

SUPPLIER	SOLE SOURCE	MULTIPLE SOURCE				
		<5%	≥5% <10%	≥10 <25%	≥25 <50%	≥ 50%
HIS	13	25		13	13	
COMSHARE		13		13	13	
ADP–NIS				13		
IBM						
CRC						
ATKINS ON-LINE				13	13	
CDC						
I.P.SHARP						
TYMSHARE						
OTHER						

EXHIBIT IV-53

ACTIVITY: ACCOUNTING AND MANAGEMENT CONSULTANCY

GROUP: ALL